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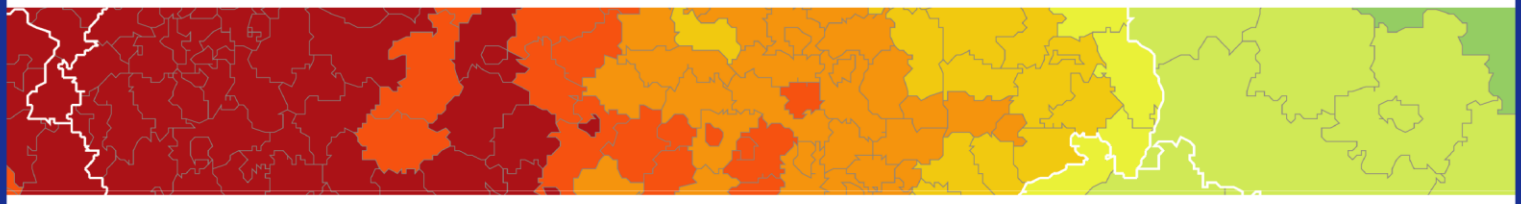

Cross-border Public Services (CPS)

Targeted Analysis

Final Report

Scientific Report – Annex IV
Case study report – EuRegio Salzburg-Berchtesgadener Land-Traunstein

EuRegio®
Salzburg · Berchtesgadener Land · Traunstein

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Abbreviations

AEBR	Association of European Border Regions
CESCI	Central European Service for Cross-Border Initiatives
CJEU	Court of Justice of the European Union
CoR	European Committee of the Regions
CPS	Cross-border public services
CPSP	Cross-border public service provision
EC	European Commission
EEA	European Economic Area
EEC	European Economic Community
EFTA	European Free Trade Association
EGTC	European Grouping of Territorial Cooperation
ESPON	European Territorial Observatory Network
EU	European Union
EURES	European Employment Services
MOT	Mission Opérationnelle Transfrontalière

1 Summary

Like the other case studies of the ESPON 2020 Targeted Analysis project on "Cross-border Public Services", **the case study** "EuRegio Salzburg-Berchtesgadener Land-Traunstein" **pursues three main objectives.** (1) Inventorying existing cross-border public services (CPS) in the case study region and analysing in-depth the practical functioning of some CPS that are of particular interest for the concerned stakeholders. (2) Assessing potentials for a further development of CPS with a view to assist regional stakeholders in launching new initiatives that may be implemented in a medium-term perspective. (3) Contributing to the establishment of an EU-wide knowledge base on CPS based upon a coherent conceptual and analytical framework.

The "EuRegio Salzburg-Berchtesgadener Land-Traunstein" (hereinafter: "EuRegio") differs from other case study regions examined by the CPS project. It covers a cross-border functional urban area with close to 280,000 inhabitants and a quite well integrated common commuting basin that expands around the Austrian city of Salzburg[1], but also rural and mountainous areas that are less densely or even sparsely populated and frequently also characterised by low levels of accessibility.

Cross-border public service provision (CPSP) started in the EuRegio already in the 1970s and has since then considerably grown. Today, the EuRegio hosts the highest number of CPS among all examined case study regions (i.e. 29 public services). Most CPS concentrate on public local transport, wastewater treatment, healthcare and emergency medical care (25 CPS). Due to this stong clustering, the EuRegio stakeholders have decided to realise a comparative analysis of all CPS in these 3 thematic fields.

In the fields of **public local transport and wastewater treatment**, the EuRegio is about to reach an optimum level of CPSP. Joint political discussions on further integrating and territorially widening the existing cross-border public transport offer are already launched. In addition, concrete talks are currently underway at local level on further expanding joint wastewater treatment, but in some cases it is not yet clear whether a cross-border or domestic solution will be adopted. These ongoing processes show that the scope for developing new services is rather reduced in these policy fields.

CPS in the fields of **healthcare and emergency medical care** are also well-developed and functioning throughout the entire EuRegio area, but the current patterns of provision show marked "imbalances". The latter are partly rooted in structural differences between both sides of the border (e.g. different scope/quality of medical treatments offered; different size of emergency vehicle fleets in border-close zones), but also resulting from shortcomings in the current legal framework for CPS and different conceptions of national/regional health policies.

[1] According to the typology elaborated by the ESPON 2006 project 1.4.3 (Study on Urban Functions), this cross-border area is considered a "Type 5" transborder functional urban area (i.e. a large city, with its functional urban area extending in the neighbour country, possibly with a scattered network of secondary centres).

This indeed offers scope for further improvements / optimisation of CPSP, but substantial progress can only be achieved if a broad variety of stakeholders at different levels achieve consensus on relevant joint measures that have to be launched and accomplished in a medium term perspective.

This case study can be particularly interesting for readers who want to get deeper insights into CPS that involve long-term planning, a high infrastructure and technical component as well as complex cross-border coordination processes among a variety of different actors.

2 Methodology

The research process for this case study was very demanding, as a comprehensive analysis of CPS in the EuRegio did not yet exist for policy areas other than public local transport. In order to present a complete and lively picture of CPSP, an extensive on-line research had to be realised because relevant information was scattered across a wide range of different sources (e.g. articles in local newspapers, press announcements, websites of stakeholder organisations, protocols of municipal councils etc.). Also several phone interviews with practitioners directly involved in CPSP were realised.

Moreover, two half-day stakeholder workshops were organised in June 2018 at the head-office of the EuRegio in Freilassing (Bavaria) with the aim to explore perspectives for a further development of CPS. One workshop focussed on “cross-border sewage water treatment” and the other on “cross-border healthcare and emergency medical services”. Both workshops were attended by a larger number of practitioners coming from both sides of the border and different types of organisations that are directly involved in the delivery of the related CPS.

This broad information base was used for analysing the current state-of-play and also future perspectives of CPSP in the EuRegio. The analysis addresses a number of core elements of CPSP that were introduced by the “conceptual framework” elaborated in the Inception Report for this study project. These are (1) the cross-border needs / opportunities motivating a set-up of CPS, (2) the legal framework conditions for CPS, (3) the production base for a provision of CPS, (4) the tasks and intervention approaches of CPS for addressing identified needs and lastly (5) the organisational structures and processes for delivering CPS.

The entire analysis devotes particular attention to unveal the complex interplay between border-related or country-specific contextual factors and CPSP, and also takes a closer look at the different types of actors that are directly involved in delivering the CPS. Only this way it is possible to fully understand why and how the CPS were established and in what way these services are provided on a day-to-day basis. A good understanding of the interplay between contextual factors and CPS is also relevant for "external" readers, who seek finding good practices for addressing challenges faced in their own cross-border areas. It helps them judging on whether the chosen cross-border solutions and forms of service organisation / delivery include aspects that might fit with their own context condtions and needs.

3 The case study region at a glance

3.1 Context conditions for CPSP at the border of the EuRegio

3.1.1 Key features of the EuRegio Salzburg-Berchtesgadener Land-Traunstein

The EuRegio Salzburg-Berchtesgadener Land-Traunstein (hereinafter: "EuRegio") was founded on 22 May 1995, shortly after Austria's accession to the EU on 1st January 1995. The EuRegio is a voluntary association that includes at the end of 2016 the following members:

- 101 municipalities from various districts in the Austrian Länder of Salzburg, Upper-Austria and Tyrol[2] as well as from three counties in the Free State of Bavaria (hereinafter: "Bavaria") on the German side[3];
- the county of Berchtesgadener Land and the county of Traunstein in Bavaria as well as the Salzburg chamber of economy (Wirtschaftskammer Salzburg) and the Salzburg chamber of labour (i.e. Arbeiterkammer Salzburg).

The EuRegio extends on 9,530 km2 and has a total population of 823,884 inhabitants (December 2016/January 2017), resulting in an average population density of 86.5 inhabitants per km2. Population density is clearly higher in the two Bavarian counties Berchtesgadener Land (123.7 inhabitants/km2) and Traunstein (113.5 inhabitants/km2) than in the Land Salzburg (76.3 inhabitants/km2)[4].

In 1997, the EuRegio Council adopted a brief strategy document entitled "guiding concepts" (Leitvorstellungen) that defines the still valid overall mission of the EuRegio[5]. One year later, the EuRegio started elaborating a cross-border territorial development concept that was presented in early 2001. At that time it was the first cross-border development concept along the German-Austrian border that demonstrated concrete goals and joint actions derived from a systematic analysis of structural features and spatial interrelations[6]. The subsequent project-based implementation of this concept also involved a development of several CPS in the areas of cross-border public transport (i.e. express bus line) and environment (i.e. sewage water treatment; natural resources management).

Of particular importance within the EuRegio is the **"core region Salzburg"** (Kernregion Salzburg), which is officially considered a cross-border city region to be jointly developed and

[2] i.e. City of Salzburg; member municipalities from the Land Salzburg districts of Flachgau, Pinzgau, Pongau, Tennengau; member municipalities from the Land Upper Austria district of Braunau; member municipalities from the Land Tyrol district of Kitzbühel.

[3] i.e. member municipalities from the Bavarian counties of Berchtesgadener Land, Traunstein and Altötting.

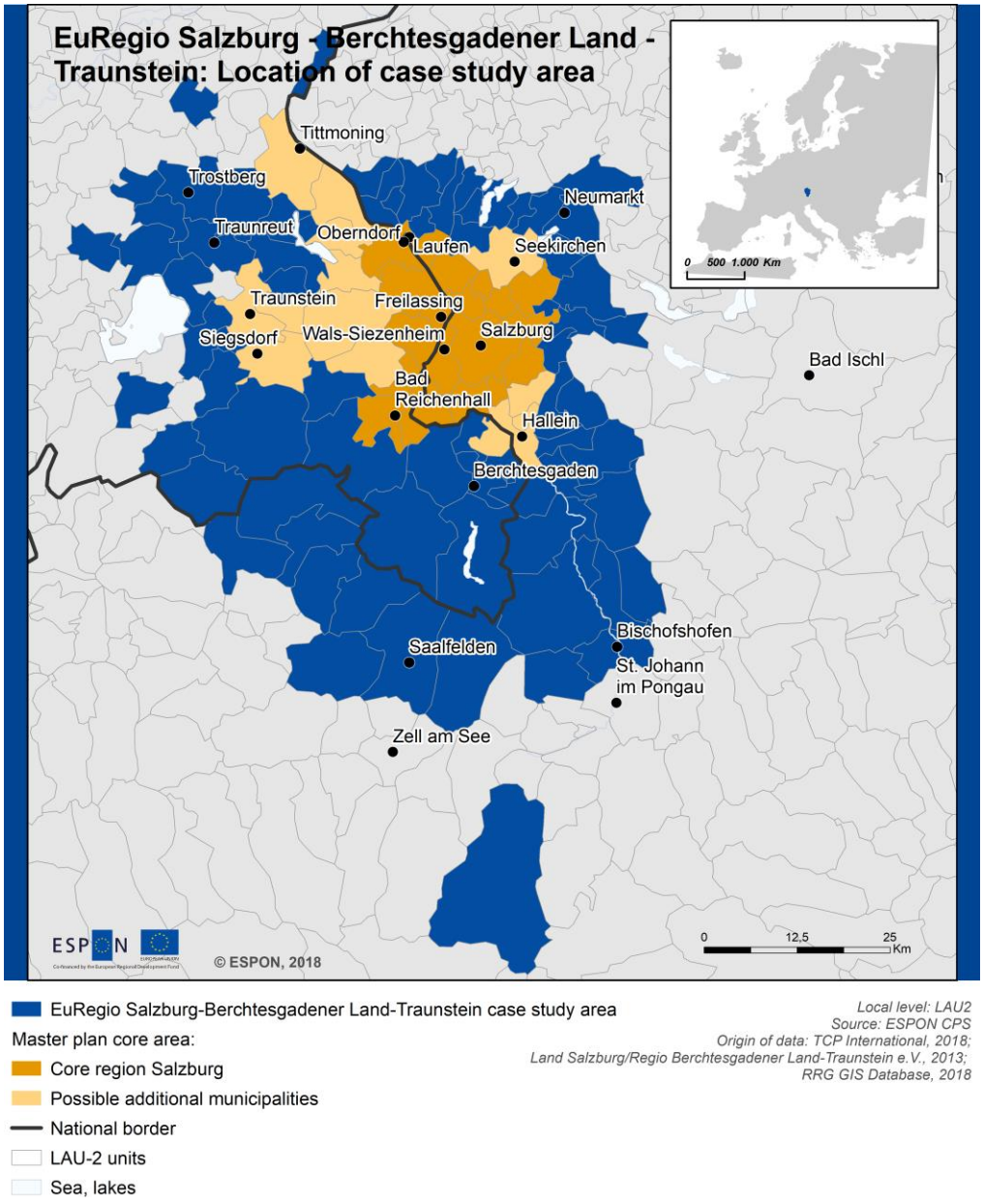
[4] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2016), p.1

[5] The mission of the EuRegio is to initiate, coordinate and support activities and projects (or the respective actors and project promoters) that promote cooperation and the "growing together" of the cross-border region, but also to ensure an economic and ecological use of the deployed resources. See: EuRegio Salzburg-Berchtesgadener Land-Traunstein (1997)

[6] ÖROK (2005), pp.3-4

steered across borders (see: map 3-1)[7]. On the Austrian side, the cross-border core region covers the Greater Salzburg area (i.e. city of Salzburg and 10 surrounding municipalities[8]) as well as some other close-by cities / municipalities in the north (i.e. Oberndorf; border-close parts of Nußdorf am Haunsberg) and south (Großgmain). On the Bavarian side, all of the border-close cities / municipalities in the county of Berchtesgadener Land (i.e. Laufen, Saaldorf-Surheim, Freilassing, Ainring, Piding, Bad Reichenhall, Bayerisch Gmein) are included. The cross-border core region has a total population of around 274,000 persons, of which 210,700 are living on the Salzburg side (147,600 in the city of Salzburg) and 63,300 on the Bavarian side.

Map 3–1 Territorial delineation of the cross-border "core region Salzburg" within the EuRegio



[7] Land Salzburg / Regio Berchtesgadener Land – Traunstein e.V. (2013), pp.7-9

[8] i.e. Anif, Anthering, Bergheim, Elixhausen, Elsbethen, Eugendorf, Grödig, Hallwang, Koppl and Wals-Siezenheim

Two Interreg IV-A projects in the field of spatial planning[9] informed the elaboration of **a cooperative spatial development concept and a common long-term vision for the cross-border core region Salzburg**. Between 2011 and 2013, this concept was also politically validated by relevant decision-making bodies on both sides of the border. Although the cross-border development concept has no legally binding character, its key elements are substantially considered in the official spatial structural analysis of the Land Salzburg 2014/2015[10]. The measures and projects proposed in the long-term concept for the cross-border core region Salzburg foresee an initiation of CPS mostly for public local transport, but not explicitly for other policy fields that are equally relevant for cross-border territorial development (e.g. hospital cooperation, sewage water treatment, waste disposal, joint management of border rivers)[11].

3.1.2 Border-related effects with relevance for a development of CPS

The ESPON 2013 project "GEOSPECS" identified four dimensions that simultaneously characterise any border (i.e. political, physical / geographical, economic, socio-cultural)[12] and generate various "closure effects" or "opening effects" for all kinds of cross-border exchange relations. Such border effects also occur at the segment of the German-Austrian border covered by the EuRegio and strongly influence on the past, present and future development of CPS.

Effects associated with the political dimension of the border

The Austrian-German state border was formerly an EEC-EFTA / EU-EEA border that became an internal EU border on 1st January 1995 with Austria's accession to the EU. Both countries are today members of the Schengen and Eurozone areas, wherefore the formal EU border status is under normal conditions[13] not expected to create significant difficulties for developing CPS in the EuRegio. However, the political border still is the "meeting point" of different national governance systems and of diverging legal provisions or administrative proceedings. These differences affect in practice all kinds of cross-border relations between both countries and are thus also influencing the development and ongoing provision of CPS.

Germany and Austria are federal governance systems that use German as official language in all their legal matters and administrative proceedings. Until recently, however, there were

[9] (1) Interreg project "EuRegionale Raumanalyse (EULE)", realisation period 2008 – 2010: this project identified spatial potentials, spatial indicators and spatial scenarios as a basis for decision-making on territorial development in Southeast Upper Bavaria / Salzburg area. (2) Interreg project "Kooperatives Raumkonzept für die Kernregion Salzburg" (MASTERPLAN), realisation period 2008 – 2010: this project identified different short to medium-term planned spatially relevant projects, characterised functional policy areas and territories and also defined pilot projects and measures.

[10] Land Salzburg (2016c)

[11] For the included measures, see: Land Salzburg / Regio Berchtesgadener Land – Traunstein e.V. (2013), pp. 44-48

[12] ESPON (2012a)

[13] Potentially adverse effects on CPSP can emerge from a temporary reintroduction of border controls at internal EU and Schengen area borders. This occurred at several EU borders since the crisis of the Schengen Area, which was induced by the very strong influx of migrants and asylum seekers during recent years as well as by a number of terrorist attacks on the European territory. See: CoR (2017).

marked differences between both countries especially as regards the possibility of their federal entities (Länder) and lower-level territorial authorities (esp. municipalities) for establishing cross-border cooperation on the basis of public law. These differences were for a long time rooted in the restrictive position of Austria's constitutional law regarding public-law based cross-border cooperation of the country's self-government authorities (i.e. Länder, municipalities) and also in the parallel absence of a German-Austrian interstate agreement on decentralised cross-border cooperation[14] (i.e. such an agreement does not exist until today).

A substantial improvement of this situation was expected to emerge from the EU-wide introduction of EGTCs through Regulation (EC) 1082/2006, but these hopes did not fully materialise during the 2007-2013 Structural Funds programming period. This was because an adoption of application provisions in the federal laws of Austria and Germany had not progressed until the end of 2013[15], although regional-level provisions were already adopted and also in force in all concerned Länder of both countries (i.e. in Bavaria already since January 2008; in Salzburg since September 2009).

For the amended EGTC Regulation (EU) 1302/2013 that applies in the programming period 2014-2020, changes to the previous regional implementing legislations entered into force in the Land Salzburg since 2014 and in Bavaria only since 1st of September 2017. EGTCs have thus only very recently become a "secure" option for establishing public-law based cross-border cooperation and are up to now the only legal instrument that German and Austrian regional or local authorities are able to use for developing and running a CPS.

Specific systems differences exist between Germany and Austria in two other policy areas that are particularly relevant for CPS: **cross-border cooperation between rescue services and a cross-border provision of healthcare services.**

(1) The Federal Republic of Germany and the Republic of Austria concluded an agreement on mutual assistance in the event of disasters or serious accidents that entered into force already in 1992[16]. However, this agreement does not cover the traditional mutual emergency aid that is quickly provided in border-close areas without long decision-making procedures in the sense of good neighbourly relations (i.e. ground-based or airborne rescue services). Moreover, also a mutual agreement on the regulation of cost associated with such cross-border emergency interventions does not exist along the entire Bavarian-Austrian border. This gap could in principle be closed because regulatory competences in this policy field are located in both federal states at the same levels (i.e. at Länder level).

[14] This is one of the main conclusions emerging from an Area Specific Technical Report "Germany-Austria" elaborated in 2004 by Viktor Frhr. von Malchus as a background document (non-public) for a DG Regio study on public-law based cross-border cooperation in Europe. See : European Commission, DG REGIO (2004).

[15] In Austria, Germany and Belgium, the country-wide processes have taken longer due to strong federal structures. In Austria and Germany, legal provisions for implementing EGTCs in the federal laws were still under discussion in 2011/2012 and no certainty did exist on whether these discussions would come to an end until 2013/2014. See: CoR (2012), CoR (2014).

[16] Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (2018)

Nevertheless, it can be observed that cross-border cooperation between ground-based and air-based emergency services of Bavaria and Austria works very well and that the day-to-day practice is perceived unproblematic especially by the Bavarian side[17]. However, it seems that some imbalances and adverse border effects are not yet fully overcome especially in the border zone covered by the EuRegio. Request for cross-border emergency aid are more often made by Bavarian dispatch centres than by Austrian centres, which is probably due to the Bavarian "time-to-assistance periods" (Hilfsfristen)[18] for emergency rescue that do not exist in Austria. Further reasons tend to be cost-related considerations, as Austrian emergency medical services are cheaper than German ones and because cross-border financing issues are still unresolved (e.g. billing, reimbursement and price levels)[19].

(2) Strong systems differences between Germany and Austria exist also in the field of healthcare. They exist for the applied national / regional health policies and also with respect to the organisation and financing of domestic healthcare systems (incl. statutory public health insurances). These differences cause an imbalanced pattern of cross-border service provision, which is favourable for Bavarian patients and unfavourable for patients from Salzburg.

Cross-border framework conditions are much more favourable in the field of vocational education and training (VET), which also stimulates cross-border mobility of apprentices along the entire Bavarian-Austrian border. An important positive factor is the high similarity and common tradition of VET-systems in the two countries, which both use German as teaching language. But also the long-standing existence of specific interstate agreements on this policy area is a positive element (i.e. not relating to cross-border cooperation) that strongly facilitates a mutual recognition of diploma and professional certificates. These are the "German-Austrian Agreement on Cooperation in Vocational Education and the Mutual Recognition of the Equivalence of Vocational Certificates" of 1989[20], which was in 2005 further deepened by the "Joint Declaration on Vocational Education and Training on the Comparability of Vocational Qualifications"[21].

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[17] BASt - Bundesanstalt für Straßenwesen (2006), pp.39-40, 97

[18] The time-to-assistance period is the most important planning and quality feature for operations of fire brigades and rescue services.

[19] BASt - Bundesanstalt für Straßenwesen (2006), pp.39

[20] On ground of this interstate agreement, a large number of Austrian and German final apprenticeship examinations as well as master craft examinations and further education certificates were mutually recognised. The holders of these certificates are thus placed as if they had taken the examination in accordance with the respective provisions applicable in Austria or Germany.

[21] The Joint Declaration aimed at consolidating the confidence of companies and businesses in the quality of education provided in the respective neighbouring country in order to improve the possibilities for mobility of workers. It de-bureaucratised the work to determine an equivalence of German and Austrian educational qualifications and accelerated related procedures. Recommendations on the comparability of vocational qualifications were also extended to school education in Austria that is comparable to German apprenticeship in the field of specialised training.

Effects associated with the physical / geographical dimension of the border

The cooperation area of the EuRegio is characterised by the presence of two border rivers (i.e. Saalach, Salzach) that can be crossed over a long distance only by a few bridges, but also by high mountain ranges with altitudes up to 2,500 meters that mark the border between the Land of Salzburg and the Bavarian counties of Berchtesgadener Land and Traunstein.

Despite the existence of significant physical / natural obstacles in the immediate border zone, it can be observed that the multimodal potential accessibility of Nuts 3 areas covered by the EuRegio was in 2006 most often clearly above the ESPON average of 100[22]. Moreover, a recent stock-taking of the current cross-border public transport offer revealed a well-developed internal accessibility of the EuRegio core area (i.e. Greater Salzburg, Bavarian counties of Berchtesgadener Land and Traunstein): cross-border public transport connections are good in overall terms, with in part parallel offers of bus and railway between the county Berchtesgadener Land and Salzburg as well as with potentials for further optimisation and sometimes also for expansion[23].

An important feature of the predominantly rural and mountainous cross-border area is the presence of valuable landscapes and important natural assets along many parts of the EuRegio border. Protected areas are important in several Nuts3 areas of the EuRegio[24], but especially in the mountainous border zone covered by the German national park "Berchtesgadener Alpen" and the Austrian "Europe and Nature Reserve Kalkhochalpen". These manifold assets also generate potentials for CPSP in the fields of tourism and nature protection, which are already addressed through seasonally operated cross-border public bus lines for tourism and especially through an ongoing cooperation between the neighbouring nature parks.

Effects associated with the economic dimension of the border

There are no major economic discontinuities along this segment of the German-Austrian border, although some differences do exist. The GDP per capita is clearly higher in the Land of Salzburg than in the two Bavarian counties[25], but an inverse situation exists for unemployment where both sides have also experienced inverse long-term trend changes[26]. However, the structural prerequisites for economic development and an increased competitiveness of companies are generally positive in the EuRegio. This creates

[22] 120 or more in the Nuts 3 areas "Berchtesgadener Land", "Traunstein" and "Salzburg und Umgebung", but only 93.9 in the area "Pinzgau-Pongau". See: ESPON (2012b), p.23

[23] Niemann. / Koch (2016)

[24] The share of NATURA 2000 areas in the total territory covered by Nuts 3 areas is particularly relevant in the Bavarian county Berchtesgadener Land (37%) and in the area Pinzgau-Pongau (22%) on the Austrian side, as they stand out considerably in comparison to the other involved Nuts 3 areas. See: ESPON (2012b), p.26

[25] GDP per capita at current market prices (2014/2015): Salzburg (EUR 46,300), Berchtesgadener Land (EUR 29,947) and Traunstein (EUR 36,438). See: EuRegio Salzburg-Berchtesgadener Land-Traunstein (2016), p.3

[26] Rates for unemployment in 2016 and for the 10-years evolution (2006-2016): Salzburg (5.6% and +40%), Berchtesgadener Land (4.1% and -31.7%) and Traunstein (3.0% and -41.2%). See: EuRegio Salzburg-Berchtesgadener Land-Traunstein (2016), p.2

employment opportunities on both sides of the border, although labour demand is not the same in all sectors and job categories. These opportunities, together with sometimes higher wages in Austria, are acting as push and pull factors that stimulate cross-border commuting of workers and apprentices.

The most significant but unbalanced flows of cross-border workers occur in the Greater Salzburg area, which is the most important labour market centre within the EuRegio[27]. At a much lower extent, however, cross-border commuting of workers exists also around other border-close and locally important employment centres on the Austrian side (e.g. Hallein, Bischofshofen / St. Johann, Saalfelden) or on the German side in the counties of Traunstein (e.g. Traunreut, Traunstein / Siegsdorf), Berchtesgadener Land (e.g. Freilassing) and Altötting (e.g. Burghausen). Also cross-border commuting of apprentices shows an unbalanced flow pattern within the EuRegio. While about 500 young people from Bavaria completed in 2010/2011 an apprenticeship in the Greater Salzburg area, only about 30 apprentices from Salzburg commuted to neighbouring Bavaria areas[28].

These cross-border commuting flows also motivated the establishment of a targeted cross-border public advice and counselling service within the EuRegio, which forms part of the European job mobility portal EURES (i.e. the cross-border EURES-T). Advisors from public labour market services in Bavaria and Salzburg inform cross-border workers and apprentices about living and working conditions in the neighbouring country as well as about country-specific rules relating to taxation, social security, pensions, family benefits or the recognition of professional qualifications and diploma.

Effects associated with the socio-cultural dimension of the border

There are no major socio-cultural dividing lines within the EuRegio, as German is spoken on both sides of the border (i.e. absence of linguistic barriers) and because it can be assumed that cultural closeness as well as a generally positive perception of the common long-term historical legacy are mostly favouring cross-border interaction. These “opening effects” tend to favour mutual trust and a general feeling of belonging together, enhance interpersonal contacts or stimulate inter-institutional exchanges and cooperation, rather than the opposite.

In the administrative cultures of both countries, however, very different technical languages and interpretations of technical terms have developed. This may at some extent also influence on the development or ongoing provision of CPS, especially if the latter involve tasks with a high technical content or complex procedural aspects.

[27] Exact and also up-to-date figures on cross-border commuting in the EuRegio do not exist. In 2011, around 4,000 cross-border commuters came daily from Bavaria to work in the Salzburg area. Conversely, the number of Salzburg residents who work in Bavaria was only half as large (around 2,000). The number of Bavarian commuters working in Salzburg had almost quadrupled in a ten years period (2001: 1,100 commuters), whereas the number of Salzburg commuters working in Bavaria had steadily decreased in the same time. See: Land Salzburg (2011)

[28] Land Salzburg (2011)

3.2 Summary overview on CPS currently provided in the EuRegio

Table 3-1 and map 3-2 show that a total of 29 CPS already exists in the EuRegio, which cover the following policy areas and/or fields of intervention: (1) public local transport, (2) labour market and employment, (3) healthcare and emergency medical care, (4) civil protection and disaster management, (5) sewage water treatment and sewage sludge disposal, (6) nature park cooperation as well as (7) culture and leisure.

In three of the above-mentioned policy areas, various and closely interrelated CPS exist: this is the case for public local transport (18 CPS), sewage water treatment and sewage sludge disposal (4 CPS) and healthcare and emergency medical care (3 CPS). As these three policy fields are of particular interest for the EuRegio, it was jointly agreed that the stock-taking analysis in chapter 4 will compare the full range of services (25 CPS) in these policy fields instead of assessing only a single service case.

Map 3-3 shows the concentration of CPSP along different segments of the EuRegio border. The total number of CPS in the map is higher than 29, which is due to the fact that some service areas are overlapping and thus covering various border segments.

The highest concentration of CPSP is found at the central border segment between the Bavarian county of Berchtesgadener Land and the Land Salzburg (i.e. Freilassing - Bad Reichenhall – Hallein - Berchtesgaden). This matches more or less exactly the border segment that is covered by the "cross-border core region Salzburg". The next highest concentrations of CPSP are found along the immediate northern continuation of this central border segment (i.e. between Freilassing and Laufen/Oberndorf) and also along the south-western continuation until Unken/Schneitzelreuth. Along the then following northern and south-western segments of the border covered by the EuRegio, however, the concentrations of CPSP are clearly lower.

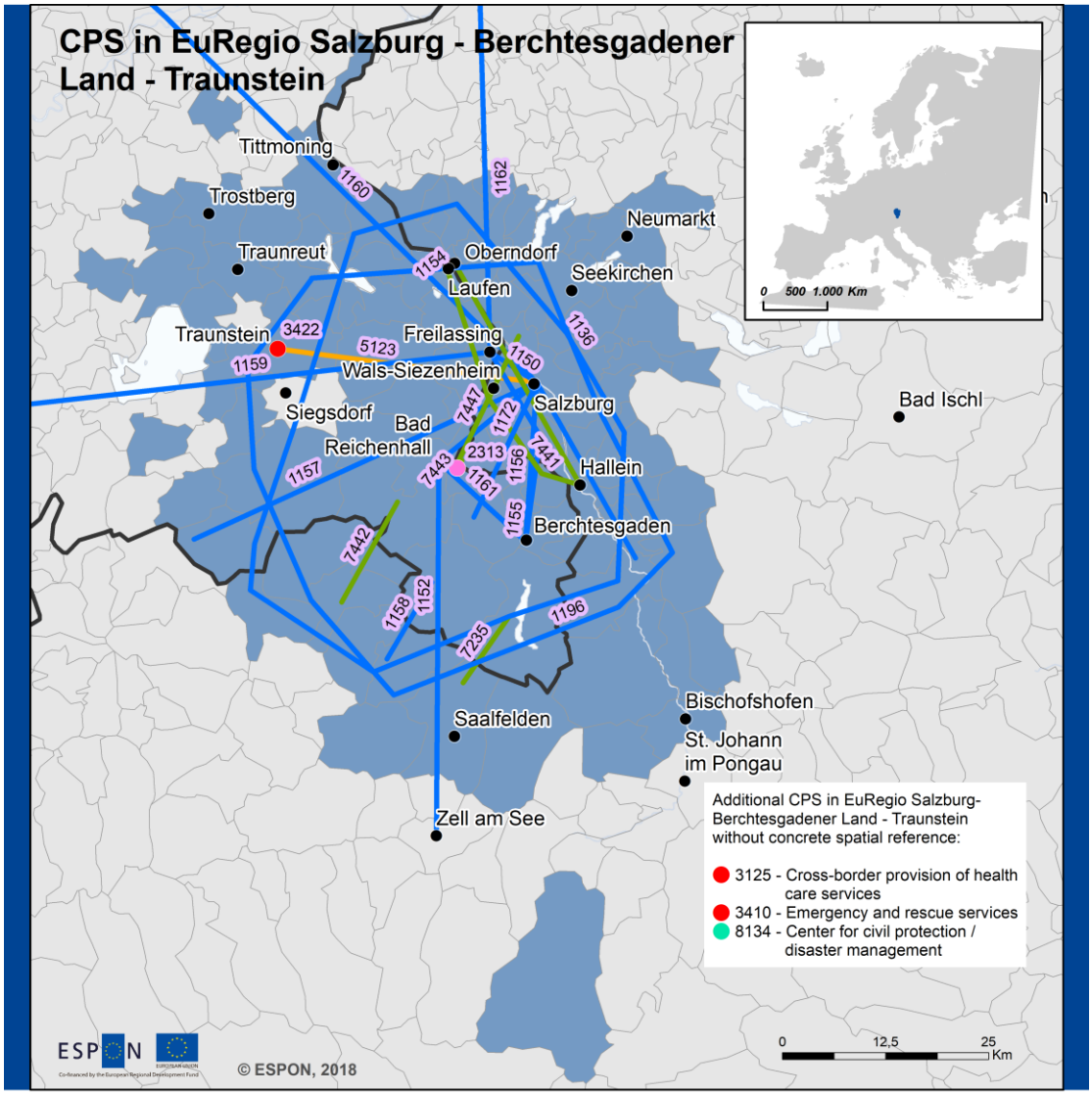
Table 3–1 CPS existing in the EuRegio Salzburg-Berchtesgadener Land-Traunstein

CPS	Focus
Public local transport	
9 direct cross-border bus lines, which are partly operated on longer distances within the EuRegio and partly at an inter-municipal level or only on a seasonal basis.	Cross-border bus services operated by various German and Austrian transport companies on longer distances within the Euregio are the "Linie 24 Salzburg - Freilassing" (Hogger / Albus), the "Linie 180 Salzburg - Bad Reichenhall" (ÖBB Postbus), the "Linie 260 Salzburg - Bad Reichenhall - Zell am See" (ÖBB Postbus) and the "Linie 840 Salzburg – Berchtesgaden (RVO / Albus)". Cross-border bus services between neighbouring municipalities, partly also for school transport, are the "Linie 112 Laufen – Oberndorf" (ÖBB Postbus), the "Stadtbus Laufen – Oberndorf" and the "Linie 836 Freilassing – Berchtesgaden" (RVO, only transport of pupils). Seasonal cross-border bus services are the "Linie 9535 Salzburg - Reit im Winkl" (RVO Mozartexpress) and the "Linie 847 Alm-Erlebnis-Bus", both targeting tourists and operating only between May and October.
6 direct cross-border rail or rapid-transit rail connections for commuters / travellers within the EuRegio	Cross-border rail lines are „KBS 951 München-Salzburg" (Meridian / BOB), „KBS 945 Salzburg-Mühldorf-Landshut" (SOB / DB) and the two regional express lines "REX Freilassing - Braunau/Inn" (ÖBB) and "REX/S2/R Freilassing-Linz" (ÖBB). Cross-border connections of the rapid-transit railway Salzburg (S-Bahn Salzburg) are the line S2 "Freilassing-Salzburg-Straßwalchen" (ÖBB) and the two overlapping lines S3/S4 "Berchtesgaden-Freilassing-Salzburg-Schwarzach/St.Veit" (BLB/ÖBB).
EuRegio activities for passenger information on cross-border public	EuRegio activities focus on better informing passengers about available public transport services. An "EuRegio public transport map" is regularly published, which shows all lines of local and regional transport by bus and train (including the night bus

transport offers and inclusion of tourism destinations into a cross-border bus / train ticket	lines) within the EuRegio. This is a joint project involving various transport operators in the area (Salzburg AG, regional traffic Upper Bavaria – RVO, Salzburg Transport Association SVV), the counties Berchtesgadener Land and Traunstein as well as the EuRegio itself. At the initiative of the EuRegio, specific tourism destinations on the Bavarian side were included into a regional bus / train ticket of the regional traffic association Upper Bavaria (RVO) and the Berchtesgadener Land Bahn (BLB) that is also valid on cross-border lines (BGL-TagesTicket Bus & Bahn).
Free of charge cross-border transport of bicycles in trains	Cross-border environmentally friendly mobility by train and bicycle is pro-actively promted within the EuRegio. All local trains operated by Südostbayernbahn (SOB), BerchtesgadenerLandBahn (BLB) and the Austrian Federal Railways (ÖBB) between Freilassing and Salzburg main station are transporting bicycles free of charge. The service offer addresses the general public (incl. tourists) and was established by the counties of Berchtesgadener Land, Traunstein and Altötting.
Coordination and integration of tariffs for cross-border public local transport offers	Transport companies with cross-border activities within the EuRegio have decided to mutually recognise their domestic associative or in-house tariffs and also became partners of the "Salzburg Transport Association SVV". The cross-border expansion of the SVV tariff zone affects only the Bavarian county of Berchtesgadener Land. A small-scale Interreg project is currently preparing a further widening and integration / harmonisation of public transport offers through the set-up of an "EuRegio transport and tariff association"
Labour market and employment	
Information and advice services for cross-border commuters and companies, supported by EURES.	Within the EuRegio, information and counselling work for cross-border commuters and companies takes place via the employment agency Traunstein (DE) and the employment service Salzburg (AT). EURES Advisers in Salzburg, Traunstein, Freilassing and Altötting advise commuters or employers on issues such as job search or working conditions in the respective neighbouring country. The service is primarily dedicated to workers who work in a country other than the one in which they live and who return daily or at least once a week to their place of residence. Also targeted job fairs for job seekers and companies in the field of tourism are regularly organised.
Healthcare, long-term care and social inclusion	
Cross-border provision of healthcare services	Healthcare services are provided on a cross-border basis within the EuRegio, but the predominant pattern of provision is essentially a "one-way street": German citizens living in the EuRegio are able to benefit of medical and hospital care services relatively easily on the Austrian side, while Austrian citizens do not enjoy this opportunity at a similar level on the German side.
Intense and steady cooperation between emergency medical services and between other rescue services (fire brigades, mountain rescue, water rescue)	A further development of the long-standing cooperation between emergency medical services and other rescue services was enhanced by joint technical equipment for cross-border interventions. Radio devices were purchased for the "Integrated Dispatch Centre" in Traunstein (Bavaria) to facilitate cooperation / communication with the Land-level dispatch centre in Salzburg. To ensure communication in support of operations of the Austrian Red Cross by those of the Bavarian Red Cross (and vice versa), specific communication equipment was purchased (i.e. 24 digital handheld radios) and also fixed stations were installed into 2 command vehicles.
Emergency medical helicopter "Christoph 14", stationed at the air rescue centre in Traunstein / Bavaria,	At the air rescue centre in Traunstein (Bavaria), also an emergency medical helicopter with the call sign "Christoph 14" rescue helicopter is stationed The primary area of operation covers a radius of approx. 60km around the air rescue center. Due to this, also cross-border air rescue missions are possible for the Austrian dispatch centres located in the Innviertel, Upper Austria, Salzburg and Tyrol. However, main area of operation for Christoph 14 is the Southeast of Bavaria.
Civil protection and disaster management	
Steady cooperation between dispatch centers in Bavaria, Salzburg and Tyrol	A data exchange platform was established between dispatch centers (Leitstellen) in Bavaria, Salzburg and Tyrol to ensure faster and more efficient cross-border assistance. Also arrangements were developed that define future tactical-organisational cooperation between dispatch centres for cross-border assistance and relief interventions as well as in case of disasters and major loss events.
Environmental protection, natural resources management and climate change action	
Treatment of sewage from Bavarian municipalities by the Greater Salzburg wastewater treatment association (AT)	The Greater Salzburg wastewater treatment association (RHV - Reinhalteverband Großraum Salzburg) operates one of the largest biological wastewater treatment plants with a capacity of 680,000 population equivalents (plant "Siggerwiesen" in Anthering) that also treats wastewater collected from various Bavarian municipalities. Waste water of the municipality Ainring (DE) is led under the river Saalach to Wals-Siezenheim (AT) and further onwards to the wastewater treatment plant Siggerwiesen. Since May 2005, wastewater of some of estates in Freilassing (i.e. Bruch) is also disposed via the Ainring sewage system to Austria. Sewage water of the municipality Laufen (DE) is led under the river Salzach to Oberndorf (AT) and then onwards to Siggerwiesen for treatment. The Tennengau Nord wastewater treatment association (AT) collects waste water of some isolated estates in the Bavarian municipality of

	Marktschellenberg (Barmstein, Zill) through a cross-border sewer and forwards it through the sewer network of Salzburg to Siggerwiesen (i.e. the Tennengau Nord association does not have its own wastewater treatment plant).
Treatment of sewage from the municipality of Schneizlreuth (DE) by the wastewater treatment association Pinzgauer Saalachtal (AT)	The Pinzgauer Saalachtal wastewater treatment association (RHV - Reinhalteverband Pinzgauer Saalachtal) treats wastewater of several sub-parts of the municipality of Schneizelreuth (i.e. Schneizlreuth, Unterjettenberg and Fronau), for which connection sewers were built in 2014 to the association's wastewater treatment plant located in Unken. Schneizlreuth has become a full member of the Austrian wastewater treatment association and has for this set up an own company "Water Disposal Schneizlreuth GmbH".
Treatment of sewage from the municipality of Großgmain (AT) by the municipality Bayerisch Gmain (DE)	The municipality Bayerisch Gmain operates a fully biological wastewater treatment plant which is also used since 1971 sewage water from the neighbouring municipality of Großgmain. Around 99% of all households in the municipality of Bayerisch Gmain and also households in Großgmain are connected to public drainage. A renovation of the wastewater treatment plant with an investment volume of EUR 3.68 million has been decided.
Joint sewage sludge disposal and incineration, Bayerisch Gmain (DE), Greater Salzburg wastewater treatment association and incineration plant in Lenzing (AT)	Liquid sewage sludge from Bayerisch Gmain is transported since July 2016 by truck to the Greater Salzburg wastewater treatment association's plant "Siggerwiesen" (AT), where it is squeezed and dried and subsequently transported to a suitable incineration plant that is located in Lenzing near Vöcklabruck (AT). Thanks to this new cooperation, Bayerisch Gmain does not have to build an own local mud press and also no drying hall. For this new cooperation, however, a rather complex overall legal framework had to be established.
On-going cooperation between the national park "Berchtesgadener Alpen" (DE) and the Europe and Nature Reserve "Kalkhochalpen" (AT)	To explore synergies and promote sustainable development in the interest of all, first cross-border cooperation initiatives were started under Interreg IIIA (project: EuRegional recreation area Berchtesgaden National Park / Salzburger Kalkhochalpen). A joint monitoring system was developed that provides decision-makers in Austria and Germany with continuous information on the dynamic changes in landscape-related recreational uses and thus identifies the need for action and enables the development of measures that both sides take into account from the outset. Further cross-border projects between both parks were realised under Interreg IVA (e.g. Almregion Bayerisch-Salzburger Kalkalpen). Other thematic projects were also supported under the INTERREG IIIB Programme Alpine Space (ECONNECT, ALPENCOM).
Spatial planning, economic development, tourism and culture	
Joint sports and leisure facility of the municipalities Bayerisch Gmain (DE) and Großgmain (AT)	The municipalities of Bayerisch Gmain and Großgmain have jointly financed and set up a sports and leisure facility on the German side which is in operation since August 2001 ("Gmoa Arena"). The facility is used by both municipalities and offers possibilities for football, ice- or asphalt curling, boccia, beach volleyball and school sports (i.e. tracks, long jump, fields for various ball games). The facility on the German side is also used by the local Austrian team for its games within the 2nd class regional league of Salzburg.

Map 3–2 Location of individual CPS along the border of the EuRegio



Themes / fields of application of CPS services

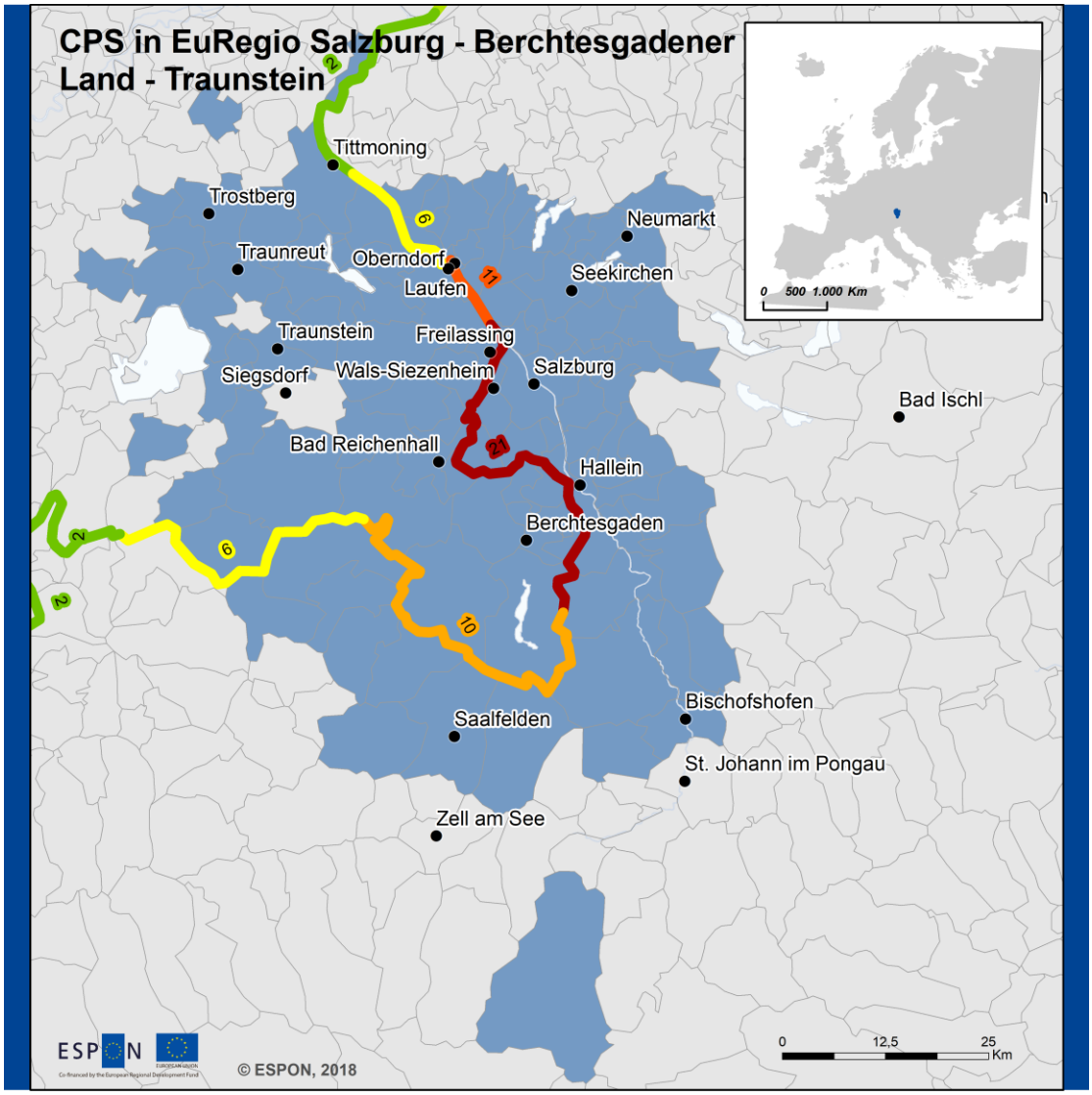
- Citizenhip, justice and public security
- Civil protection and disaster management
- Communication, broadband and information society
- Education and training
- Environment protection
- Healthcare and social inclusion
- Labour market and employment
- Spatial planning, tourism and culture
- Transport

- Case study area
- National border
- LAU-2 units
- Sea, lakes

Local level: LAU2
Source: ESPON CPS
Origin of data: TCP International, 2018; Eureconsult, 2018; RRG GIS Database, 2018

CPS no	CPS title	CPS no	CPS title
1150	Cross-border bus line 24 Salzburg-Freilassing	1161	S2 and S3/S4 cross-border rapid train connections (2 lines)
1151	Cross-border bus line 180 Salzburg-Bad Reichenhall	1162	REX cross-border rail connections (2 lines)
1152	Cross-border bus line 260 Salzburg-Bad Reichenhall-Zell am See	1136	EuRegio activities: map for passenger information and integration of tourism destinations in cros-border rail/bus-ticket
1153	Cross-border bus line 112 Laufen-Oberndorf, pupils only	1196	Integration of tariffs for cross-border public local transport lines
		1172	Free of charge cross-border bicycle transport by trains
1154	Cross-border city bus Laufen-Oberndorf	7441	Wastewater treatment for various Bavarian municipalities at the RHV Salzburg plant "Siggerwiesen"
1155	Cross-border bus line 836 Freilassing-Gröding-Berchtesgaden, pupils only	7442	Wastewater treatment for Schneizlreuth at the RHV Pinzgauer Saalachtal plant in Unken
1156	Cross-border bus line 840 Salzburg-Berchtesgaden	7443	Wastewater treatment for Großgmein at the plant in Bayerisch Gmain
1157	Cross-border bus line 9535 Salzburg-Reit im Winkel	7447	Joint sewage sludge disposal and incineration
1158	Cross-border touristic bus 847 (Alm-Erlebnis-Bus)	7235	Cross-border recreational area Berchtesgaden Alps – Kalkhochalpen
1159	KBS 951 Meridian Cross-border train München-Salzburg	2313	Cross-border sports arena (Gmoa Arena)
1160	KBS 945 cross-border train service Sazlburg-Mühldorf-Landshut	5123	Information and counselling service for cross-border commuters and companies
		3422	Emergency medical helicopter "Christoph 14" in Traunstein

Map 3–3 Intensity of CPS along the border of the EuRegio



Number of CPS per border segment

- no CPS
- 1 - 2
- 3 - 5
- 6 - 7
- 8 - 10
- 11 - 15
- 16 - 23

- Case study area
- LAU-2 units
- Sea, lakes

Local level: LAU2
Source: ESPON CPS
Origin of data: TCP International, 2018; Eureconsult, 2018; RRG GIS Database, 2018

4 CPS provided in the EuRegio

4.1 Cross-border public local passenger transport services

First steps towards establishing cross-border public local passenger transport services were already made in the 1950s by the German-Austrian agreement on the border crossing of railways[29]. This agreement entitled and obliged the respective national railway companies to continue passenger transport services from the national border to the next railway station in the neighbouring country[30]. As early as 1960, the bus company "Hogger" from Freilassing in Bavaria wanted to set up an express bus line Freilassing-Salzburg, but this innovative bottom-up initiative failed due to the opposition of administrative authorities[31].

During the following decades, however, a larger number of CPS for public local transport have developed within the EuRegio, but their exact dates of establishment are unknown. Today, these public transport services are provided partly by bus (i.e. 9 direct cross-border bus lines) and partly by rail or rapid-transit railway (i.e. 6 direct cross-border connections).

4.1.1 Cross-border needs and opportunities motivating the setup of CPS

The establishment of CPS on local transport is strongly influenced by the EuRegio's particular physical / geographical features and by the territorially different distribution / concentration of its socio-economic potentials. Both aspects lead to a highly variable settlement structure and to irregular population density (i.e. urban / suburban areas; rural areas, mountainous areas) as well as to territorially variable mobility patterns resulting from different motivations of residents (e.g. job-related commuting, education, shopping, leisure / tourism etc.).

Past and present-time needs

An important need that motivated and still motivates the establishment of CPS on public local transport as well as their further integration are **manifold challenges linked to the high traffic volume within the cross-border "core region Salzburg"** (see: section 3.1.1).

The mobility of persons living on the Salzburg side of the core region is particularly high during working days, with between one third of inhabitants' movements (in Salzburg-City) and even more than half of them (in areas sourrounding Salzburg-City) being realised by car. High volumes of individual car traffic are induced by the intense job-related commuting between the political districts of Salzburg-City, Salzburg-Umgebung (Flachgau) and Hallein (Tennengau)[32], but also by movements realised for shopping and education-related purposes.

[29] Agreement between the Republic of Austria and the Federal Republic of Germany on the regulation of the border crossing of railways of 28 October 1955.

[30] Salzburger Verkehrsverbund (2016), p.23

[31] SalzburgWIKI (2018a); Hogger Reisen (2018)

[32] The attraction of the city of Salzburg as place of work becomes evident from the pronounced daily influx of commuters from the neighbouring districts of Salzburg-Umgebung (around 26,000) and Hallein (around 7,000). But also commuter flows in the opposite direction, especially those from the city of Salzburg to the district of Salzburg-Umgebung (about 10,000), need to be considered. See: Land Salzburg (2016c), p.59

Cross-border traffic emerging from work-related commuting also exists[33], but its volume is clearly lower than that emerging from Salzburg-internal commuting. To this adds cross-border car traffic for shopping and leisure / tourism as well as international transit traffic, with the latter being concentrated mainly on the highways that lead to and around the city of Salzburg. All this traffic causes since many years a saturation of roads and growing congestion (e.g. longer travel times), but also a range of other adverse effects that are harming the environment and also the peoples' health in the Greater Salzburg area (e.g. air pollution, noise, increased land use for transport-related infrastructures etc.)[34].

For reducing traffic problems and the associated externalities, a more sustainable mobility pattern is needed within cross-border "core region Salzburg". This can be achieved by promoting alternative and environment friendly modes of mobility and in particular by further increasing the share of domestic and cross-border public transport in the total traffic mix (modal split). However, the medium-term evolution of mobility patterns in individual parts of this core region points to different potentials for developing public transport services[35].

- In the immediate city area of Salzburg, the share of public transport in the total modal split has slightly fallen from 15.6% (2004) to 14.6% (2012), while the proportion of motorised private traffic remained stable and bicycle use has strongly increased (i.e. from 16% to 19.6%).
- In the neighbouring Flachau and Tennengau districts of the Land Salzburg, however, the share of public transport grew by one percentage point to 12.3% in 2012. Reasons for this change in the mobility behaviour were mainly the establishment of the new rapid-transit railway Salzburg (S-Bahn Salzburg, line S3) and also further service orders that the Salzburg Transport Association made in the bus sector. Nevertheless, motorised private traffic still played an important role in the overall mobility pattern for both districts (54% in 2012).
- The greatest potential is clearly on the Bavarian side, where the shares of public transport in the modal split was in 2012 only at 7.9% in the county of Traunstein and at 8.7% in the border-close county of Berchtesgadener Land. This was accompanied by still important shares of motorised private traffic in the overall mobility pattern for both counties (Traunstein: 56.7% Berchtesgadener Land: 53.3%)[36].

[33] An estimated 2,500 workers from Salzburg commute to Bavaria and about 1,000 workers from Bavaria commute to Salzburg See: Land Salzburg (2016c), p.59

[34] Land Salzburg (2016b), pp.8-13;

[35] Salzburg Verkehr (2018); Salzburger Verkehrsverbund (2016); ERB - EuRegioBahnen (2015a); ERB - EuRegioBahnen (2015b)

[36] Salzburg Verkehr (2018); Salzburger Verkehrsverbund (2016); ERB - EuRegioBahnen (2015a); ERB - EuRegioBahnen (2015b)

Another important cross-border need that motivates the setting up of CPS was and still is the establishment of an **adequate public transport offer for the population living in smaller municipalities and towns located in the peripheral border zones of the EuRegio** (e.g. rural / mountainous areas and valleys). These cross-border public transport services not only connect isolated settlements and their inhabitants to each other, but also ensure that the population and especially persons with mobility limitations (e.g. young adults, elderly, physically handicapped) can adequately access their places of work as well as institutions of higher education and other important public services that are often located in the cross-border "core region Salzburg" (i.e. specialised clinics or rehabilitation facilities, theatres etc.).

Future needs and development opportunities

Many of the above-mentioned challenges continue to be of relevance in the medium to long-term future. They are therefore addressed by the "mobility concept of the Land Salzburg 2016-2025" (Landesmobilitätskonzept Salzburg), which was adopted by the regional government in September 2016[37]. Several "fields of action" in this concept include **concrete measures for further developing CPS in the field of public transport:** they foresee an extension of the "Salzburg urban commuter train" (S-Bahn Salzburg) to Bavaria in order to optimise the supply of rail passenger transport (field of action 3) and also an extension of the "Salzburg Transport Association" (Salzburger Verkehrsverbund) to the whole EuRegio area in order to ensure a uniform and simple use of public transport on both sides of the border (fields of action 8).

For realising the envisaged extensions within the EuRegio, however, the concerned policy actors from both sides had first to develop a common view on potential options. This joint reflection process was informed by two cooperation projects that received funding from the Interreg programmes "Bavaria-Austria" 2007-2013 and 2014-2020.

The Interreg IV-A project "Euregio Bahnen (ERB) Salzburg-Bavaria-Upper Austria" (January 2012 – June 2014)[38] carried out foresight planning in order to examine the technical feasibility and economic viability of different options for establishing six additional regional rail passenger services within the EuRegio area, which may even involve the construction of substantial new railway track infrastructure[39].

The Interreg V-A project "EuRegio-Verkehrsverbund" (December 2015 – June 2016)[40] realised a comprehensive current situation analysis for cross-border public transport services

[37] Land Salzburg (2016a); Land Salzburg (2016b).

[38] The project was led by the "Salzburg Transport Association" (SVG - Salzburger Verkehrsverbund Gesellschaft) and involved also a range of other co-financing partners from the Austrian and Bavarian sides (i.e. the Land of Salzburg, the Free State of Bavaria, the city of Salzburg, the counties Berchtesgadener Land and Traunstein, the EuRegio and the RSB-local association for a promotion of the regional city railway Salzburg - Bavaria - Upper Austria).

[39] See website of the Salzburg Transport Association (Salzburger Verkehrsverbund, 2018a), which also gives access to the complete study results.

[40] The project was led by the "Salzburg Transport Association" (SVG - Salzburger Verkehrsverbund Gesellschaft) and involved also the Bavarian counties of Berchtesgadener Land and Traunstein.

(bus and rail) and also examined the legal/organisational framework conditions for establishing a cross-border "EuRegio transport and tariff association" (EuRegio-Verkehrsverbund/Tarifverbund). The study results are intended to lay the foundations for another small follow-up project that shall develop various practical solutions, which later guide a comprehensive implementation project aimed at setting up the EuRegio transport and tariff association[41].

While the extension of the "S-Bahn Salzburg" has become a reality at the end of 2017 (see: section 4.1.3), especially the set up of the "EuRegio transport and tariff association" appears to be very complex and is therefore still in the process of elaboration (see: section 4.1.2).

4.1.2 General and/or theme specific legal framework conditions for CPS

The provision of domestic and cross-border public local transport by road and rail involves a broad variety of topics that are regulated by EU legislation and national or regional laws. Concrete examples are market access and approval (i.e. transport mode-specific licensing right), the modes for awarding service contracts and granting compensatory public cofinancing for public service obligations (i.e. laws on public procurement and state aid), the taxation of service provision (i.e. laws on value added tax), the respect of passenger rights (i.e. EU-wide legislation for bus/coach and rail transport[42]) and compliance with a plethora of technical prescritions for different transport modes

The current secondary EU legislation on domestic and cross-border public passenger transport aims at translating the wider Treaty objectives on services of general economic interest (SEGI)[43] into a harmonised EU-wide set of rules that regulates a provision of transport services within the Internal Market. These rules are then directly applied within the EU Member States (regulations) or transposed into their domestic legislations (directives) and subsequently put into practice by the respective national, regional and local authorities empowered to intervene in public passenger transport.

The specific legal framework for cross-border public local transport within the EuRegio is therefore complex. It emerges only if the general EU-wide rules on this matter are considered together with provisions in the national or regional legislations of both countries and in an specific interstate agreement concluded between Germany and Austria. The most important sources are shown in the overview below (see: table 4-1).

[41] Salzburg Verkehr (2018)

[42] Regulation (EU) No 181/2011 of the European Parliament and of the Council of 16 February 2011 concerning the rights of passengers in bus and coach transport and amending Regulation (EC) No 2006/2004. Regulation (EC) No 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations.

[43] Article 14 in the consolidated version of the Treaty on the Functioning of the European Union

Table 4–1 Specific legal framework for cross-border public local transport in the EuRegio

Mode / Source	Rail	Road
EU legislation	Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) No 1191/69 and No 1107/70. Council Directive 2008/8/EC of 12 February 2008 amending Directive 2006/112/EC as regards the place of supply of services. Regulation (EU) No 2016/2338 of the European Parliament and of the Council of 14 December 2016 amending Regulation (EC) No 1370/2007 concerning the opening of the market for domestic passenger transport services by rail[44].	
	Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (recast)	Regulation (EC) No 1073/2009 of the European Parliament and of the Council of 21 October 2009 on common rules for access to the international market for coach and bus services, and amending Regulation (EC) No 561/2006
Interstate agreement	Agreement between the Republic of Austria and the Federal Republic of Germany on the regulation of a border crossing of railways (1957).	-
National legislation	Austria: Federal Law on Public Local and Regional Transport of 1999 (Öffentlicher Personennah- und Regionalverkehrsgesetz, ÖPNRV-G), last amended in 2015. Germany: Federal Law on a Regionalisation of Public Local Transport of December 1993 (Regionalisierung des öffentlichen Personennahverkehrs, RegG), last amended in 2013.	
	Germany: General Railway Act of December 1993 (Allgemeine Eisenbahngesetz, AEG), last amended in 2017	Austria: Federal Law on Regular Carriage of People by Motor Vehicles of 1999 (Kraftfahrliniengesetz, KflG), last amended in 2015. Germany: Federal Law on Passenger Transport of 1969 and 1990 (Personenbeförderungsgesetz, PbefG), last amended in 2016.
Regional legislation	Land of Salzburg: no Lamd-level legislation existing Free State of Bavaria: Law on Public Local Transport in Bavaria of 1996 (Gesetz über den öffentlichen Personennahverkehr in Bayern, BayÖPNVG), last amended in 2014	

Regulation (EC) No 1370/2007 entered into force in December 2009 and **aims to achieve an Internal Market for the provision of national and international public passenger transport services by bus, tram, metro and rail.** This Regulation is of key importance for the whole public transport sector in Europe because it defines rules on how to contract for the provision of public transport services, how to award these contracts and how to compensate for public service obligations. Main implementing instruments to be used by "competent authorities"[45] in the Member States are the award of service contracts (i.e. by direct award or

[44] This Regulation entered into force in December 2017 and introduced in particular amendments to the rail sector, but also other requirements for the specification of public service obligations.

[45] The term "competent authority" means any public authority or group of public authorities of a Member State or Member States which has the power to intervene in public passenger transport in a given geographical area or any body vested with such authority.

competitive tendering) and general rules[46] on public service obligations which aim at establishing maximum tariffs for all passengers or for certain categories of passenger. However, an assessment of the Regulations' implementation showed that contractual practices still vary considerably due to diverging interpretations of certain regulatory provisions and also that existing public service contracts do not yet respect all EU rules. To address these shortcomings and for increasing legal certainty, the Commission has issued in 2014 "interpretative guidelines" for Regulation 1370/2007[47].

The common procedures introduced by Regulation 1370/2007 are on each side of the border applied within the respective public local passenger transport systems, which are established according to the provisions in relevant national-level laws of both countries and in the Bavarian Law on Public Transport (see: box 4-1). However, the main structural features of these systems (i.e. general competence, provisions on planning, competent regional / local authorities empowered to intervene in public local passenger transport) lead to **quite different organisational models within the EuRegio.**

Box 4-1 Features of public local passenger transport sytems within the EuRegio[48]

In Austria, the "Federal Law on Public Local and Regional Transport" (ÖPNRV-G) regulates the organisational and financial framework for an operation of public passenger transport. The task of the Federal government is to secure a basic offer in public local rail passenger transport (urban or suburban transport) and in public regional rail passenger transport (transport in rural areas) at the level of services provided in 1999/2000. Departing from this basic offer, the task of the federal states (Länder) and municipalities (Städte, Gemeinden) is to plan a demand-oriented local and regional passenger transport service (i.e. reduction, extension or redistribution of transport services). Länder and municipalities can also conclude contracts for passenger transport services that go beyond the minimum supply or improve the service offer of public road passenger transport.

The ÖPNRV-G also provides for a creation of "transport associations" (Verkehrsverbünde). They shall contribute to optimise the overall supply of local and regional public transport in the interest of ensuring the use of different public transport modes on the basis of a common tariff. These associations are cooperative institutions based upon private law contracts. They have a "hinge function" between regional/local authorities on the one hand, and transport companies and other system partners on the other. Transport associations coordinates all tariffs of public transport, timetables and all information systems in a clearly defined traffic area. The territorial scope of a transport association is based on actual passenger flows and may also transgress the borders between federal states or even the national border. Austria is the only country in Europe where local / regional public transport is organised nationwide in transport associations. Most Austrian Länder have in fact set up transport associations covering their full territory, but in the Länder of Vienna, Lower Austria and Burgenland a uniform system is applied since July 2016 (Verkehrsverbund Ost-Region, VOR).

In Austria and thus also **within the Land of Salzburg**, the distribution of tasks in the field of public passenger transport is organised according to **a three-level model:** (1) The competent public authority of the Land is acting as ordering party (Besteller) and exercises its powers / activities in the sense of an hierarchical over-subordination relationship. (2) The partnership-based level of the Salzburg transport association (Salzburger Verkehrsverbund, SVV), which provides various services (i.e. regulations on tariffs, marketing, administration and other services) to the orderering party and the transport providers.

[46] The term "general rule" means a measure which applies without discrimination to all public passenger transport services of the same type in a given geographical area for which a competent authority is responsible.

[47] Communication from the Commission on interpretative guidelines concerning Regulation (EC) No 1370/2007 on public passenger transport services by rail and by road 2014/C 92/01.

[48] Bundesministerium für Verkehr, Innovation und Technologie (2018); Salzburger Verkehrsverbund (2016), pp.26-37

(3) The transport providers, which are the transport companies that actually deliver public transport services.

In Germany, the Federal Law on the Regionalisation of Public Local Transport (RegG) states that "ensuring a sufficient provision of the population with public local transport services is a task of general interest". The law defines more closely public local passenger transport (Öffentlicher Personennahverkehr, ÖPNV) and local rail passenger transport (Schienenpersonennahverkehr, SPNV), which can be part of public local passenger transport. Since the entry into force of this regionalisation in December 1993, laws of the individual Länder determine the authorities / bodies that carry out this task of general interest and are responsible for the organisation and financing of public local transport.

In Bavaria, the Law on Public Local Transport (BayÖPNVG) assigns the counties (Kreise) and county-level cities (Kreisfreie Städte) the responsibility for planning, organising and ensuring general public local transport by bus or tramways (allgemeiner ÖPNV). This is done as a voluntary municipal self-government task in order provide the resident population with "sufficient transport services", on which criteria may be defined in a plan on public local transport (i.e. not mandatory). Depending on the scope of self-defined tasks, counties and county-level cities are responsible for securing the financial basis of public local transport, while taking into account other funding that is provided by the federal level and the Land government. In the field of local rail passenger transport (SPNV), the Bavarian Railway Company (BEG), founded in 1995, is responsible for the planning and ordering of all traffic on behalf of the Bavarian State Ministry of Economic Affairs, Infrastructure, Transport and Technology. BEG is acting as service ordering party (Besteller), while railway companies are service providers (Ersteller).

Within the counties of Berchtesgadener Land and Traunstein, the distribution of tasks for public local transport by bus and rail is organised in **a "two-level model".** Each county exercises the function of the task-bearer (Aufgabenträger), which implements the BayÖPNVG and is also responsible for planning, organising and securing public local transport on the respective county territory. Transport companies usually initiate "commercial transport services" (eigenwirtschaftliche Verkehre) without the granting of public subsidies, which are only approved if they ensure the requirement of a sufficient provision of local transport services. Ccounties take over the function as ordering party (Besteller) only to a very limited extent. This, for example, is the case for call bus services and night bus services, for which public service contracts exist and which are organised according to the ordering-provider principle.

Regulation (EC) No 1073/2009 sets the general framework for an international carriage of passengers by bus and coach, which may concern two or more EU Member States and even third countries. Passenger transport is provided on ground of a "Community license" that covers the entire service line. The license is issued by the competent authority of the Member State (approval authority) where the service provider is established and where the line is starting. However, the approval authority has to request agreement from the competent public authority(ies) in the other Member State(s) whose territory is crossed and/or where the line is ending.

This general procedure also applies to all CPS on public local transport within the EuRegio[49]. This means, for example, that a regular cross-border local bus service starting in the Land of Salzburg and ending in Bavaria has to be approved by the Federal Ministry of Transport in Austria[50]. The Austrian ministry must then request agreement from the Government of the

[49] Salzburger Verkehrsverbund (2016), pp.21,22

[50] i.e. According to §3 lit. 2 KflG, the Federal ministry is the competent approval authority for cross-border services, while for domestic services it is the concerned Land-level government.

Upper Bavaria district, with the latter acting in consultation with the German Federal Ministry of Transport.

The general framework for cross-border rail passenger transport services is set by Directive 2012/34/EU, which guarantees the non-discriminatory access of rail companies to railway infrastructure in all Member States. This opening up of international passenger services to competition also has implications for the organisation and financing of domestic and cross-border rail passenger services provided under a public service contract[51].

Of relevance within the EuRegio is also **the interstate agreement concluded in 1957 between the Republic of Austria and the Federal Republic of Germany**, which regulates a border crossing of railways. The agreement stipulates that Austrian and German national railway administrations are entitled and obliged (Article 4 (1)) to operate railway services on the territory of the other contracting state from the national border to the next common railway station (e.g. Salzburg main station in the case of the EuRegio).

Since this interstate agreement does also not foresee a rule for the competence on ordering a public local rail transport service, this has to be done on ground of the respective national competences. In Austria, however, the appointment of a German authority for the provision of regional / local rail passenger transport services on the national territory is not possible for constitutional reasons. Within the EuRegio, formal service ordering therefore takes place only up to the respective border and a further connection to a station on the respective other side takes place without an explicit service ordering. Prior to this proceedings, however, there is administrative coordination between the competent authorities from both sides, but this practice has no formal legal character (e.g. mandate, delegation) and should therefore be considered as “informal consent”[52].

4.1.3 The production base for a provision of CPS

Cross-border public local transport services within the EuRegio are delivered through a combined use of **“hard” infrastructures for passenger transportation** that are located on either side of the common border and include different systems elements.

An essential element are fixed infrastructure assets (e.g. roads and rail tracks at variable length, rail and bus stations) and other fixed transport-related technical installations (e.g. control and management systems for road and rail traffic). Another important element is the diverse and mode-specific mobile equipment that transport operators use for day-to-day passenger transportation. These are small or large-sized buses with different propulsion techniques (e.g. conventional diesel or biodiesel engines, natural gas or electricity), but also conventional rail rolling stock and different types rapid-transit railway trains.

[51] Salzburger Verkehrsverbund (2016), pp.22,23

[52] Salzburger Verkehrsverbund (2016), p.23

To this must be added the different elements of the governance framework for local and cross-border public transport (see: section 4.1.2). This includes the EU-level and national legislations that are regulating the organisation, provision and financing of transport services in both countries, but also the public institutions / bodies on both sides of the border that bear the policy-level responsibility for organising public local transport (i.e. transport-organising authorities) as well as other specific organisations that are in charge of coordinating / integrating individual transport services at different territorial scales (i.e. via tariff zones established for an urban / sub-urban area, a larger metropolitan area or even a regional area).

Fixed transport infrastructures (e.g. roads, bridges, rail tracks, technical installations etc.) as well as mobile transport equipment are most often already existing in the respective regional / local contexts on either side of the border. But especially cross-border local rail passenger transport services frequently require purchasing additional rolling stock that is adapted to a border-crossing operation and also the construction of new fixed transport infrastructures for eliminating "missing links" or bottlenecks (e.g. by new rail tracks, extension of rail bridges) and for creating new service access points (i.e. new train stations or specific platforms etc.). Fixed transport infrastructures are on either side of the border usually in public ownership, with the owners being located at the national or regional / local levels and also bearing cost associated with ongoing maintenance / modernisation of infrastructures.

The construction of new fixed transport infrastructures played an important role in **the establishment of the rapid-transit railway Salzburg (S-Bahn Salzburg)**[53] during the years 2002-2017, **which has also become a core element of cross-border passenger transport in the central part of the EuRegio.**

The S-Bahn Salzburg is a major local transport project in the Greater Salzburg area and a cornerstone of the public transport infrastructure programme of the Land Salzburg. With a total cost volume of EUR 232 million in the Land Salzburg, the S-Bahn is also the most investment-intensive project on local rail passenger transportation throughout Austria.

This highly complex project involved the integration and technical networking of existing railway lines, the adaptation of existing and the construction of new railway bridges, the creation of new stops for the S-Bahn (i.e. out of the 31 stops, 12 were completely built anew) as well as the construction of road underpasses and noise barriers.

The S-Bahn Salzburg was partly in operation since 2004 and has reached on the Austrian side its provisional final expansion status in 2014. Already in June 2006, the cross-border connection "Golling an der Salzach - Salzburg – Berchtesgaden" (line S3) was launched. Since December 2009, it was operated every half an hour to Freilassing. In 2016, on the section of line S3 between Salzburg and Freilassing, works for extending the railway bridge over the border river Saalach were started in order to include a third track that would only be

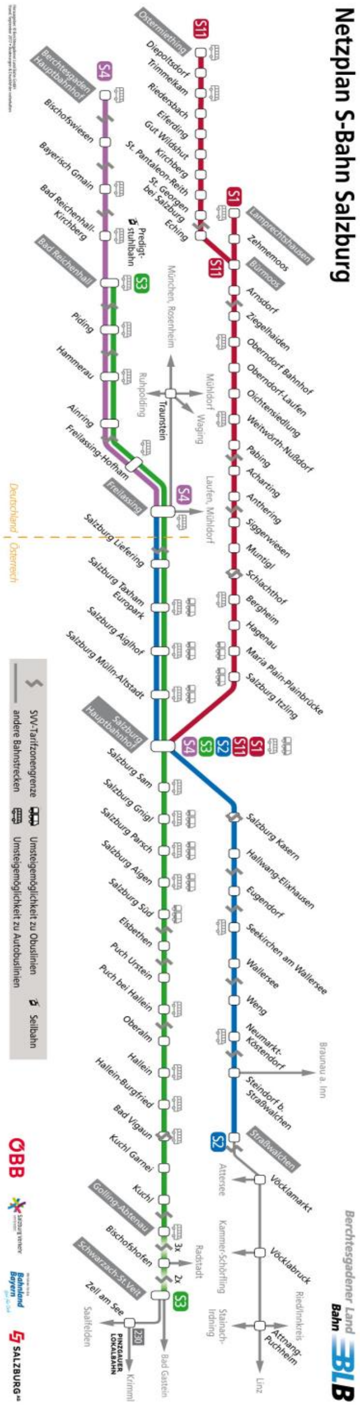
[53] Wikipedia (2018g); ÖBB - Infrastruktur (no date mentioned)

used by trains of the S-Bahn. This new track was commissioned in December 2017.Since then, also the line S2 is continued every hour until Freilassing and leaves there from a newly built platform (similar as the trains of line S3).

On the Bavarian side, four bridges and 1.6 kilometres of new tracks as well as a new platform for the S-Bahn at the station in Freilassing were built. The total cost for all infrastructures in Bavaria amounted to EUR 60 million, while on the Salzburg side the total cost amounted to EUR 180 million.

Since the end of 2017, the S-Bahn is operated on 5 lines (see: figure 4-1): 3 lines service only cities / municipalities on the Austrian side (i.e. lines S1, S11) or on the Bavarian side within the county of Berchtesgadener Land (line S4), while the 2 other lines are direct cross-border lines that link various locations in the Greater Salzburg area to cities / municipalities in the county of Berchtesgadener Land (i.e. lines S2 and S3).The 5 existing lines of the S-Bahn are operated by the Austrian Federal Railways ÖBB (lines S2 and S3), the Salzburger Lokalbahn SLB (lines S1 and S11) and the Berchtesgadener Land Bahn BLB (line S4).

Figure 4–1 Network plan for the S-Bahn Salzburg (September 2017)



Source: Berchtesgadener Land Bahn (2018a)

The legal status of the **directly involved transport operators** is highly diverse on both sides of the border (see: box 4-2), which also implies that **ownership of the mode-specific transport vehicle fleets used for delivering cross-border passenger transportation in the EuRegio is very different:** it ranges from direct or indirect public ownership to private ownership by different types of enterprises (e.g. limited liability company; corporation; subsidiary of a private holding group etc.).

The ongoing maintenance of the mobile equipment for passenger transportation is in the sole responsibility of the respective owners who also bear the associated cost. The same holds true for cost related to a potential further enlargement / modernisation of vehicle fleets.

Box 4-2: Transport operators involved in cross-border public transport within the EuRegio[54]

Salzburg AG for Energy, Transport and Telecommunications: Salzburg AG is majority owned by the Land of Salzburg and the city of Salzburg. It is an energy and infrastructure service provider and also the largest public transport operator in the city of Salzburg. Since its founding in 2000, Salzburg AG's rail transport has been marketed under the traditional name “Salzburger Lokalbahn” (SLB). Salzburg AG also operates two out of five lines of the S-Bahn Salzburg (S1, S11). The trolley bus and bus traffic, however, occurs under the marketing name “Obus Salzburg”. As part of a restructuring of urban bus transport in Salzburg, Salzburg AG also took over 49% of the private bus company Albus Salzburg Verkehrsbetrieb in 2005.

Albus Salzburg Verkehrsbetrieb GmbH: This private transport company emerged from the 2005 merger between the bus lines of Salzburg AG and Albus. It is the largest Salzburg inner city bus operator. Since 2008, the first compressed natural gas (CNG) busses started operation in public transport service and in 2011 a total of 37 CNG busses were in operation. Today, Albus services 13 public transport lines in and around Salzburg with a length of about 160 km that are used every year by 12 million passengers. Already 50% of the total fleet (37 busses) are powered by environmentally friendly natural gas and eco-diesel engines (fuel made from grass in and around Salzburg).

Hogger GmbH: The private bus company Hogger was founded in 1945 in Freilassing. Today, the company owns 35 buses that can accommodate between 8 and 35 people.

ÖBB-Postbus GmbH (ÖBB-Postbus): As the largest bus company in Austria, ÖBB-Postbus operates the majority of the intercity bus network. The company has been a subsidiary of the Austrian Federal Railways since 2003. The operative business has been organised since October 2004 in the form of ÖBB-Postbus GmbH.

Regionalverkehr Oberbayern GmbH (RVO): The RVO is based in Munich and is one of the regional bus companies, which was created in 1976 by the merger of the omnibus services of the German Federal Railways and the German Federal Post. It is a wholly owned subsidiary of DB Regio AG and strategically subordinated to DB Regio Bus (formerly DB Stadtverkehr). Since 1 February 2009, the company has been operating under the brand name “DB Oberbayernbus”.

Österreichischen Bundesbahnen (ÖBB): In 1992, the Austrian Federal Railways were separated from the federal budget and turned into a company with its own legal status. In 2004, the ÖBB was reorganised into an “ÖBB Holding AG” and a number of operating subsidiaries that manage the infrastructure and operate passenger and freight services. Die von den ÖBB betriebenen Linien S2 und S3 der Salzburger S-Bahn werden mit 11 dreiteiligen Elektrotriebwagen vom Typ Talent (ÖBB Reihe 4023) und 10 vierteiligen Triebwagen der Reihe 4024 bedient.

Bayerische Oberlandbahn GmbH (BOB): BOB is a private rail transport company of the railway group Transdev GmbH headquartered in Holzkirchen. Since December 2013, BOB also operates under the brand name "Meridian" the electrical regional traffic in the network Rosenheim between Munich, Salzburg and Kufstein.

Südostbayernbahn (SOB): SOB is a RegioNetz of the German Reailway AG (DB), which covers since 2003 the “star of lines” Mühldorf. It is subordinated to DB RegioNetz Verkehrs GmbH and DB RegioNetz Infrastruktur GmbH.

Berchtesgadener Land Bahn GmbH (BLB): BLB is a rail transport company in the county of Berchtesgadener Land, based in Freilassing and founded in May 2009. It is a Ltd (GmbH) under German law and a joint subsidiary of Salzburg AG and the Regentalbahn. Since December 2009, the BLB operates the S4 line of the Salzburg S-Bahn between Freilassing and Berchtesgaden. There are five railcars of the Flirt type used. Together with ÖBB, BLB also operates the S3 line of the Salzburg S-Bahn, where BLB railcars of the Flirt type are used.

[54] Hogger Reisen (2018); Wikipedia (2018f)

4.1.4 CPS tasks and intervention approaches to address cross-border needs

Within the EuRegio, the existing CPS on public local transport by road or rail are simultaneously fulfilling three important tasks.

- They have a **basic supply task** for the concerned local population in the EuRegio, as they ensure adequate access to affordable mobility services for all and/or specific person groups.
- These CPS have also an **important development task** because they allow better harnessing the available workforce in order to stimulate socio-economic development of the EuRegio.
- Finally these CPS have a **non-negligible conservation task,** as they contribute to achieving a more sustainable mobility pattern within the EuRegio and thereby help improving environmental conditions especially in the more densely populated areas.

All CPS in the field of public local transport address cross-border needs with an **intervention approach** that aims to **improve the quality and effectiveness of public service provision within the EuRegio. This is done in three different ways.**

- Firstly, through a development of completely new CPS either for the general public or for specific target groups (e.g. pupils, tourists), with these services filling a gap in the domestic public service offer on either side of the border (e.g. cross-border bus lines).
- Secondly, through the extension of an already existing domestic public service offer to the other side of the border (e.g. conventional rail connections, S-Bahn Salzburg).
- Thirdly, through better information of public transport users on existing offers and especially by a cross-border integration of transport tariffs.

To illustrate this quality and effectiveness improvement, the main features of CPSP are in the following analysed more in depth.

Cross-border local passenger transport by bus

Currently, there are 9 cross-border bus lines in the EuRegio (see: box 4-3). These lines are operated either jointly by two transport companies from each side of the border (i.e. bus lines 24, 180, 840, Alm-Erlebnis-Bus) or by an individual transport operator from one side that delivers the service on both sides of the border (i.e. lines 260, 112, 836, City Bus Laufen, Mozart-Express).

Box 4-3: Basic features of cross-border bus lines in the EuRegio (status, April 2018)[55]

(1) Cross-border bus line 24 "Salzburg – Freilassing" (Hogger / Albus): The bus line 24 is serviced by the Freilassing-based bus company Hogger during the week and on Sundays or public holidays by the Salzburg-based company Albus. The line is almost an express line, with only a few stops along the route. In Freilassing it also links the Alpine Park, where numerous leisure and shopping opportunities exist. With the direct line prolongation to Salzburg city centre that was realised in autumn 2003, the number of passengers has significantly increased. Travel time: 19 minutes and 22 minutes back. Interval: every half an hour from Monday to Saturday during peak hours and Sunday every hour.

(2) Cross-border bus line 180 "Salzburg - Bad Reichenhall" (ÖBB Postbus / Regionalverkehr Oberbayern): The bus line 180 goes from Salzburg Mirabellplatz via the main train station and Salzburg Airport to Großgmain, where it crosses the state border and ends in Bad Reichenhall. Travel time: 52 minutes.

(3) Cross-border bus line 260 "Salzburg - Bad Reichenhall - Zell am See" (ÖBB Postbus): Bus line 260 goes from Salzburg main station via the "Kleines Deutsche Eck" on Bavarian territory to Lofer in Austria again and then on via Saalfelden to Zell am See. In terms of distance, it is the longest continuous connection in the Land of Salzburg. Travel time: 2 hours 12 minutes

(4) Cross-border bus line 112 "Laufen – Oberndorf" (ÖBB Postbus): Only school traffic from Monday to Friday, if there is a school day in Bavaria and a working day in Austria (morning / afternoon). No traffic on Saturdays and Sundays / public holidays.

(5) Cross-border "City Bus" Laufen – Oberndorf: The city of Laufen (DE) is integrated into the bus network of the regional transport association Upper Bavaria (Regionalverkehr Oberbayern - RVO). Laufen additionally offers the "City Bus Laufen – Oberndorf", which is a public facility of the city that operates two cross-border lines to the immediately neighbouring city of Oberndorf (AT): (1) the "City Bus school bus line" for pupils that is only operated on school days from Monday to Friday and (2) the "City Bus Ruperti line" for all citizens that is operated on working days from Monday to Saturday, except Wednesday and Saturday afternoon. At the railway station in Oberndorf, access to the lines S1 / S11 of the Salzburg S-Bahn is possible.

(6) Cross-border bus line 836 "Berchtesgaden - Marktschellenberg – Freilassing" (Regionalverkehr Oberbayern): Only school traffic from Monday to Friday. From Berchtesgaden, the bus continues until „Zollhäuser" where it crosses the border, then runs on the Austrian side (Grödig, Neu Anif) and returns back to Bavaria (Freilassing).

(7) Cross-border bus line 840 „Salzburg – Berchtesgaden" (Regionalverkehr Oberbayern / Albus): The bus line establishes a fast connection from the main station in Salzburg over the city center and the alpine road to Anif and from there over Marktschellenberg and Unterau to Berchtesgaden. There are also visitor magnets along the route, such as the Untersbergbahn, the Almbachklamm or the Watzmanntherme. Travel time: 46 minutes and 49 minutes back. Interval: Monday to Friday during the day almost every hour.

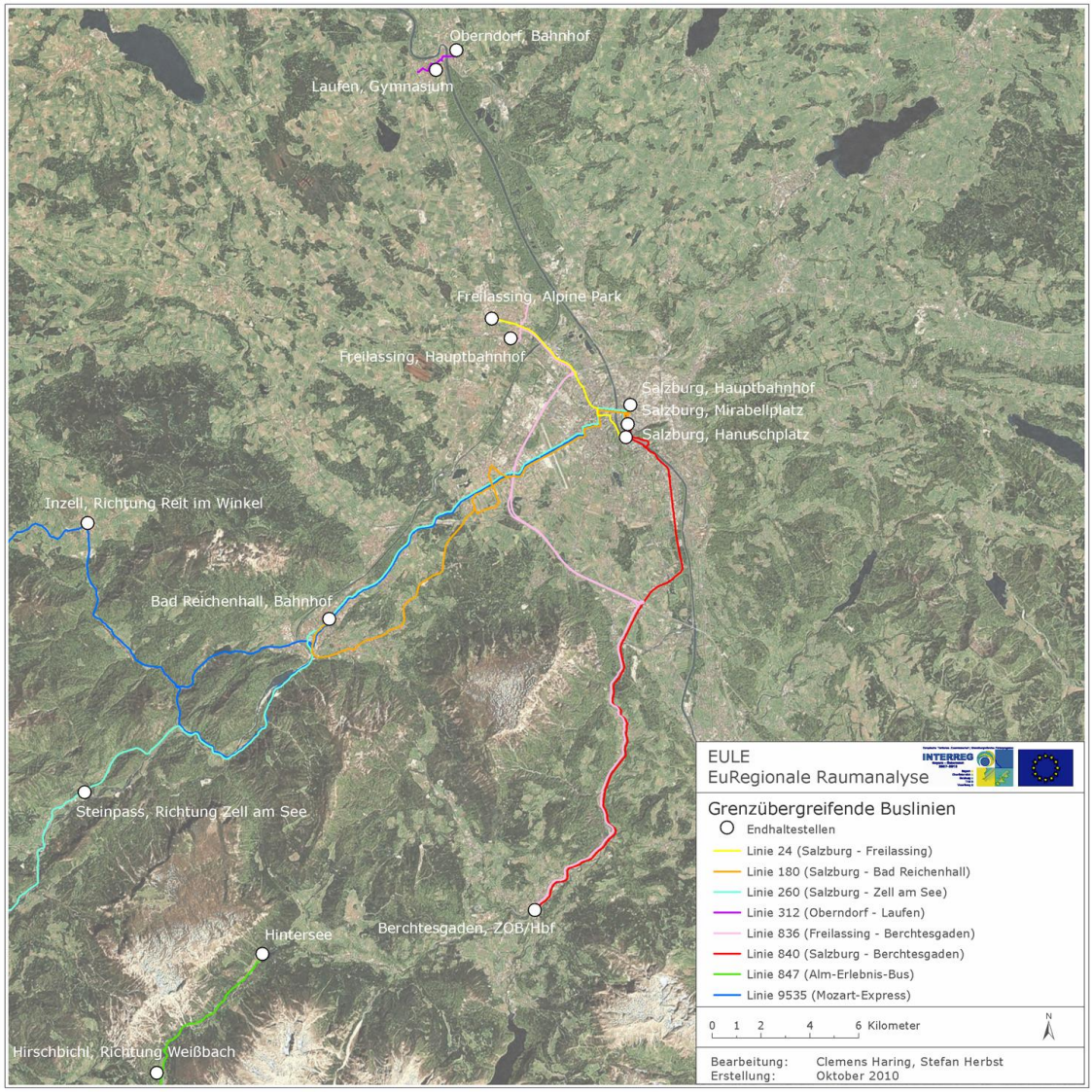
(8) Cross-border bus line 847 "Alm-Erlebnis-Bus" (ÖBB Postbus / Regionalverkehr Oberbayern): Already since 1997, a cross-border hiking bus connected the two tourism regions Salzburger Saalachtal (AT) and Ramsau at Hintersee (DE). Today the line is a cross-border tourist offer that operates only in summer (May to October) and takes hikers to the many Bavarian and Austrian tourist attractions in the Berchtesgaden National Park and the Weißbach Nature Park. The bus travels from the Bavarian Hintersee via the Hirschbichl Pass to the Salzburger Saalachtal.

(9) Cross-border bus line 9535 "Mozart-Express"(Regionalverkehr Oberbayern): The line leads from Reit im Winkl, Ruhpolding, Inzell or Bad Reichenhall (DE) directly to the city of Salzburg (AT). As the Mozart Express is primarily targeting tourists, it is only operated during the tourism season from May to October.

[55] Salzburger Verkehrsverbund (2016); SalzburgWIKI (2018a); ÖBB-Postbus (2018); Stadt Laufen (2018); Mozart-Express (2018); Alm-Erlebnis-Bus (2018)

The service areas of these cross-border bus lines (see: map 4-1) cover different parts of the Land Salzburg, but in Bavaria most often the county of Berchtesgadener Land (8 lines) and only in one case also the county of Traunstein (Mozart-Express).

Map 4–1 Itineraries of cross-border bus lines within the EuRegio



Original source: RSA-iSpace, Interreg-Projekt EuRegionale Raumanalyse, Projektbericht Teil2 (Datenstand: 2010). Map found in: Salzburger Verkehrsverbund (2016), p.40

The four regular cross-border bus lines in the EuRegio provide their services at a different extent on either side of the border. The bus lines 180 (Salzburg-Bad Reichenhall) and 24 (Salzburg-Freilassing) as well as the longest bus line 260 (Salzburg-Bad Reichenhall-Zell am See) provide only a small proportion of their service on the Bavarian side (<20%), wherefore the largest service parts are consequently provided in the Land of Salzburg. For the line 840 (Salzburg-Berchtesgaden), finally, the territorial shares of service provision are almost equal between both sides[56]. The situation for the other cross-border bus lines is variable: some

[56] Niemann / Koch (2016); Salzburger Verkehrsverbund (2016), pp.40-42

operate over a longer distance predominantly on the Bavarian side (Mozart-Express, providing “through service” to the city of Salzburg), while others operate with relatively equal shares on both sides of the border on a longer or medium distance (line 836; Alm-Erlebnis-Bus) or even on a very short distance between two neighbouring border cities (the 2 Laufen-Oberndorf lines).

Clear differences also exist with respect to the target groups addressed by these cross-border bus services. While the four regular cross-border bus lines (i.e. lines 180, 260, 24 and 840) and also the “City Bus Laufen-Oberndorf” are focussed on the general public, the other four lines are focussed either on pupils (i.e. lines 112 and 836) or tourists (i.e. Mozart-Express, Alm-Erlebnis-Bus).

The existing cross-border bus lines already ensure a better accessibility of / connectivity between the specific areas serviced within the EuRegio, but a recent stock-taking analysis on all existing cross-border transport connections pointed to potentials for further improvement and optimisation[57]. Especially for the longest cross-border bus line 260 “Salzburg-Bad Reichenhall-Zell am See”, the analysis recommended a further increase of service frequency. Moreover, a further optimisation might be needed because some of the regular bus lines between the county of Berchtesgadener Land and the city of Salzburg are creating a parallel offer to existing rail passenger transport offers (see below).

First quality improvements were already realised for the non-regular cross-border tourism bus “Mozart-Express” through a small-scale EuRegio project supported by the Interreg V-A programme Austria-Bavaria. The aim was to improve the attractiveness of this line with a view to relieving the environment and the city of Salzburg of individual traffic by tourists. Thanks to an innovative cooperation between the operator Regionalverkehr Oberbayern (RVO) and the Salzburg Tourismus GmbH, passengers of the Mozart Express are now offered even more service. Since summer 2017, the Mozart-Express buses have been equipped with free Wi-Fi and a “content portal” in German and English that provides up-to-date regional information on driving weather and other aspects (i.e. music, audiobooks). In addition, the two companies have developed an own logo for the Mozart Express bus and a brochure with information on the timetable and fare, excursion and hiking tips as well as a city map of Salzburg[58].

Cross-border local passenger transport by rail and rapid-transit railway

The cross-border offer on local rail passenger transport is already well-developed within the EuRegio and the currently existing 6 lines (see: box 4-4) also create a good connection between the sub-areas of the cross-border "core region Salzburg".

However, there are some parallel offers by bus and train between Salzburg and the county of Berchtesgadener Land. Also optimisation potentials do exist, such as an increased clocking of

[57] Niemann / Koch (2016); Salzburger Verkehrsverbund (2016), pp.40-42

[58] DB Oberbayernbus (2018)

rail traffic on the line KBS 945 “Mühldorf-Salzburg” (currently only 2h-clocking, compared to the 1h-clocking on the line KBS 951 “Munic-Salzburg”). Further potentials for increasing the clocking exist for lines of the S-Bahn Salzburg (general 15-minute intervals)[59].

Box 4-4: Currently existing cross-border rail / rapid-transit railway connections in the EuRegio

(1) The entire **railway line "KBS 951 Munich-Salzburg"** is served hourly by trains of the brand "Meridian", which are operated by the Bavarian Oberlandbahn (BOB). On this line, there are also several long-distance trains (EuroCity trains, InterCity trains) running to Salzburg and beyond.

(2) On the railway line **"KBS 945 Landshut-Mühldorf-Salzburg",** regional trains operated by the Südostbayernbahn / Deutsche Bahn run every two hours.

(3) and (4): The **S-Bahn Salzburg** has a network of five lines that are operated by three providers: the Salzburg AG, the Austrian Federal Railways (ÖBB) and the Berchtesgadener Land Bahn (BLB). Of importance for cross-border passenger transport are the **lines S3 / S4 and S2:**

- **The line S3 (Schwarzach/St.Veit–Salzburg–Freilassing–Bad Reichenhall)** is operated by the Austrian Federal Railways (ÖBB) and the Berchtesgadener Land Bahn (BLB). The S3 line is served hourly in the section Schwarzach-St.Veit-Freilassing-Bad Reichenhall and runs since 2017 also every two hours to Saalfelden. On weekdays, service frequency on this line is increased between Freilassing and Golling-Abtenau at half-hourly intervals. The line S3 is overlapped by **line S4 (Freilassing-Bad Reichenhall-Berchtesgaden),** which only lies on the Bavarian side. The BLB operates line S4 and also the overlaping part of line S3.
- **The line S2 (Freilassing-Salzburg-Straßwalchen)** is operated by the Austrian Federal Railways (ÖBB) and runs every hour between Freilassing and Salzburg Main Station since the completion of the third track in December 2017. In Freilassing, S2 and S3 leave from a newly built island platform.

(5) and (6): Regionalexpress (REX) is the name of an ÖBB train type that operates faster than regional trains and slower than intercity trains. The name Regionalexpress was introduced with the 2006 timetable change and replaced the hitherto common naming “express train”. As a rule, REX trains do not stop at all stops and stations, but only at select ones, so they are faster than regional trains and S-Bahn trains. There is the connection **REX "Braunau / Inn-Salzburg-Freilassing" (REX 5863, 5867, 5871, 5875)** which operates every hour and the connection **S2 / R / REX "Linz-Wels-Strasswalchen-Seekirchen-Salzburg-Freilassing",** with the REX part “Linz-Salzburg” operated every hour.

The development of annual passenger volumes on line S3 of the S-Bahn Salzburg (Golling – Freilassing) shows a steady and steep increase from around 1.250 million in 2002 (still normal rail connection) to around 2.080 million in 2006 (1st year of S3 operation) and 2,731 million in 2009 up to 4.2 million in 2015. This strong increase in user numbers is mainly due to the dense network of modern stops (especially in the city of Salzburg and in Tennengau) and also to the half-hour service frequency of the S-Bahn. Another relevant success factor is the modern and air-conditioned rail rolling stock that is used by the S-Bahn[60].

Also **quality improvements** of cross-border rail passenger transport are realised. An interesting CPS that promotes an environmentally friendly mobility within the EuRegio is **the free of charge transporting of bicycles on all local trains operated by Südostbayernbahn (SOB), BerchtesgadenerLandBahn (BLB) and the Austrian Federal**

[59] Niemann / Koch (2016); Salzburger Verkehrsverbund (2016), pp.40-42

[60] ÖBB - Infrastruktur (no date mentioned); Salzburger Nachrichten (2016)

Railways (ÖBB) between Freilassing and Salzburg main station. This service offer addresses the general public (incl. tourists) and was established on ground of a decision taken by the counties of Berchtesgadener Land, Traunstein and Altötting. The latter concluded written agreements with the railway operating companies that foresee each a flat-rate cost compensation for the transportation of bicycles, which the counties subsequently pay to every company. Free bicycle transport is thus possible on all 3 Bavarian-sided main lines in all regional trains (except Meridian) up to Salzburg main station[61]. Furthermore, at the initiative of the EuRegio, also **specific tourism destinations on the Bavarian side were included into a bus / train ticket** (BGL-TagesTicket Bus & Bahn) of the regional traffic association Upper Bavaria (RVO) and the Berchtesgadener Land Bahn (BLB) **that is also valid on cross-border lines** (see: box 4-5).

Box 4-5: Tourism by a cross-border rail / bus ticket (BGL-TagesTicket Bus & Bahn)[62]

The "BGL-TagesTicket Bus & Bahn" is valid for unlimited travel in local trains of the railway operators BLB, DB, BOB and ÖBB (train types: BLB, RB, RE, M, REX, S) on the line "Salzburg Hauptbahnhof-Freilassing-Berchtesgaden / Freilassing-Teisendorf as well as in the overall network of the regional traffic association Upper Bavaria (Regionalverkehr Oberbayern, RVO). Since May 2014, on presentation of the ticket, a 10% discount on entry prices is granted at many tourism destinations in the Berchtesgadener Land (e.g. Königsseeschifffahrt, Berchtesgaden salt mine, Kehlsteinhaus, Jennerbahn, Predigtstuhlbahn, Watzmanntherme, Lokwelt Freilassing, Haus der Berge and since June 2018 also Hans-Peter Porsche Traumwerk). Target group of the ticket are tourists and locals from Salzburg and the Berchtesgadener Land. They can leave the car at home, save parking fees, travel relaxed by bus and train and also make a contribution to environmental protection. Through this EuRegio initiative, actors from the tourism sector are now also cooperating more closely with public transport operators, thus creating an attractive offer for users in an uncomplicated manner.

Nevertheless, **cross-border rail passenger transport can sometimes be seriously disturbed by closure effects associated with the political dimension of a border.** This was the case during September/October 2015, when border controls were temporarily reintroduced at the internal EU and Schengen border between Bavaria and Austria. Border controls strongly hampered cross-border travelling within the EuRegio especially on the railway line Salzburg - Munich, over which many refugees came to Germany. Train services had been interrupted on this line for nearly 4 weeks until mid of October 2015, which led to a kind of “state of emergency” because cross-border local rail traffic had come to a complete end. During the first week of October, local “Meridian” trains of the operator Bayerische Oberlandbahn (BOB) started again their service until Salzburg, but they had to return empty to Bavaria. In parallel also trains of the Austrian Federal Railways (ÖBB) started to take up limited traffic to Bavaria, while the German Federal Railway (DB) announced that train traffic

[61] CPS-survey results

[62] Berchtesgadener Land Bahn / Regionalverkehr Oberbayern (2014); Berchtesgadener Land Bahn (2018b)

on the Salzburg - Munich line would remain interrupted probably until mid-October due to border controls[63].

Information for public transport users and cross-border tariff integration

As the models for organising and financing public local transport by road and rail are different on each side of the border (see: section 4.1.2), also different tariffs for daily, weekly and monthly tickets are applied for cross-border journeys than for intra-Austrian or intra-German journeys.

A first option for overcoming such differences is a better information of public transport users about existing services. **A supporting CPS has been initiated by the EuRegio, which publishes every two years an overview map on various public transport services** in order to promote a more environmentally friendly mobility pattern. The map is elaborated in close cooperation with other partners from the public transport sector and the next edition will be published in December 2018. It covers different public transport modes (e.g. by bus, trolleybus, train/ligh rail, boat and cable cars) and includes detailled network plans for urban / suburban transport in the city of Salzburg as well as in other cities of the EuRegio (i.e. Trostberg, Traunreut, Traunstein, Berchtesgaden, Bad Reichenhall, Hallein, Laufen / Oberndorf and Freilassing). Many tourism sights and suggestions for trips in combination with public transport are also included. This map is available free of charge on both sides of the border at customer / service centres in local train stations, at tourist information offices, at county-level public administrations as well as at the EuRegio office. This service is aimed at cross-border workers, students and apprentices, day tourists and overnight guests[64].

A more comprehensive and also demanding solution for overcoming these differences is a **stronger cross-border coordination and integration of fares for public local transport services.** This was developed already at an early stage within the EuRegio, when the tariff area of the Salzburg transport association SVV (see: box 4-6) was extended to the Bavarian county of Berchtesgadener Land in June 1997. This coverage of the neighbouring Bavarian county led to Europe's first cross-border extension of a domestic public transport tariff[65].

Box 4-6: „Salzburg Transport Association" (Salzburger Verkehrsverbund, Salzburg Verkehr)[66]

The "Salzburger Verkehrsverbunds GmbH" (SVG), established on 27. April 1995 as a private company owned 100% by the Land of Salzburg, is the organisational structure of the **"Salzburg transport association" (Salzburger Verkehrsverbund, SVV)**. The current legal basis of the SVV is mainly the Federal public passenger and regional transport law of 1999 (ÖPNRV-G). The SVV covers the city of Salzburg and the entire Land of Salzburg, but also parts of the adjacent Austrian Land Upper Austria (Innviertel to Braunau, Hausruckviertel to Attnang-Puchheim, Salzkammergut to Bad Ischl) and the county of Berchtesgadener Land in Bavaria. Since June 2015, the SVG / SVV operates under the **new**

[63] Heimatzeitung (2015)

[64] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2018)

[65] Bundesministerium für Verkehr, Innovation und Technologie (2018); Salzburger Verkehrsverbund (2016), pp.26-37

[66] Salzburg Verkehr (2018)

brand name "Salzburg Verkehr".

The tasks of “Salzburg Verkehr” are manifold: (1) the planning and further development of local and regional transport lines and networks, (2) the coordination of the ordering of transport services, (3) the control of the fulfilment of quality criteria, (4) the exercise of network-specific (cross-company) marketing and sales activities as well as the implementation of network-specific customer information, (5) the function as arbitration and clearing house for billing and allocation of proceeds, (6) the preparation of proposals for local and regional government transport planning, (7 the planning for the conclusion of transport service contracts (orders) including cost and revenue estimation, (8) the handling of transport service contracts, the ordering of transport services in motorised transport and tender procedures on behalf of local authorities and other third parties and (9) consultation on concession awards (distance concessions). Salzburg Verkehr has currently about 40 employees.

Transport companies driving under “Salzburg Verkehr” serve well over half a million people per day. In 2015, around 68.9 million passengers were carried: 41.5 million passengers in city traffic (including transfer passengers) and 27.4 million passengers in regional traffic (including transfer passengers).

In the following, transport companies operating cross-border services within the EuRegio have decided to mutually recognise their domestic associative or in-house tariffs and also became partners of the Salzburg transport association[67]. However, this cross-border expansion of the SVV’s tariff zone does not yet include the Bavarian county of Traunstein[68].

As zone-wide / associative tariffs or in-house tariffs for public local transport have historically developed in parallel on either side of the border, **a wide range of fares is currently applied for cross-border journeys with public transport in the EuRegio** (see: box 4-7). However, this diversity of tariffs for cross-border journeys can be confusing for public transport users. In terms of price, the SVV-tariff is viewed attractive from the customer's point of view and its importance is generally very high on the lines of the S-Bahn Salzburg. On the railway lines of the DB and the BOB, however, the SVV-tariff has a very low importance when compared to the own tariff offers of both railway companies. In total, one can assume an approximate 50/50 share between the SVV-tariff and other tariffs applied on the section Salzburg and Freilassing. Moreover, since the ticket offer is usually limited to cross-border connections, it is observed that a truly cross-border transport tariff association does not yet exist within the EuRegio[69].

Box 4-7: Status quo of tariff integration within the EuRegio[70]

All train stops as well as all buses of the “Regionalverkehr Oberbayern” (RVO) in the county of Berchtesgadener Land are integrated into the SVV-tariff zone, if at least one stop outside of Bavaria is located within the SVV-tariff zone.

The SVV-tariff applies on cross-border lines from Salzburg to the county of Berchtesgadener Land, both by bus (e.g., line 24) and by rail or rapid-transit railway (e.g. Meridian, Südostbayernbahn, S2,

[67] The current partners of Salzburg Verkehr are the "Salzburg AG for Energy, Transport and Telecommunications", the "Albus Salzburg Verkehrsbetrieb GmbH", the "Hogger GmbH", the "ÖBB-Postbus GmbH", the "Regionalverkehr Oberbayern GmbH (RVO)", the " ÖBB-Personenverkehr AG ", the" Bayerische Oberlandbahn GmbH "(BOB), the" Südostbayernbahn (SOB) / DB RegioNetz Verkehrs GmbH "and the" Berchtesgadener Land Bahn GmbH (BLB) ".

[68] Salzburger Verkehrsverbund (2016), p.10

[69] Salzburger Verkehrsverbund (2016), pp.10, 42-44

[70] Salzburg Verkehr (2018); Niemann / Koch (2016); Salzburger Verkehrsverbund (2016), pp.42-44

S3/S4).

All zone-wide / associative tariffs and in-house tariffs for local rail passenger transport (i.e. C-price DB, BOB, BLB) apply to all local trains on the cross-border lines between Salzburg and Freilassing.

In the case of cross-border bus lines, the “Berchtesgaden Land tariff” of the RVO applies if the territory of Salzburg is crossed (i.e. bus lines 836, 840, 9535). Conversely, the SVV-tariff applies when Bavarian territory is crossed (i.e. bus line 260). For Bavaria-internal rides, however, the RVO-tariff applies (i.e. on the lines 260 and 180 of ÖBB-Postbus).

SVV-tickets can be obtained from the train crew of Berchtesgadener Land Bahn (BLB), in buses of the ÖBB-Postbus and RVO or even via smartphone by using the "Salzburg Verkehr APP". However, surcharge tickets for a combination with an existing ticket are not available in this APP.

Due to all this, **the existing system is currently examined with a view to replace it by a territorially more wide-ranging and also structurally further integrated cross-border “EuRegio transport / tariff association” (EuRegio-Verkehrsverbund / Tarifverbund).** In order to realise this association, actors responsible for organising public transport within the EuRegio are also examining the use of an EGTC for establishing a public-law based cross-border structure.

This institutionalisation is necessary above all because a tariff association requires that there is an organsiation / structure ensuring a neutral distribution of revenue between the involved transport companies from both sides of the border. The sharing of revenue is also associated with high one-time investment costs and ongoing operating costs, for which a permanent financing base must be found that does not lead to transport fare increases. The aim of the currently ongoing discussions for the development of a cross-border solution within the EuRegio is therefore to create the largest possible area for this tariff association so that the additional costs per passenger linked to the distribution of revenue are as low as possible[71].

4.1.5 Organisational structures and processes for delivering CPS

The organisation and delivery modes of CPS on public local transport that are currently existing in the EuRegio follow in most cases a “centralised model”, but in one case also a “integration model”.

(1) A shared service centre model with a one-sided management approach is applied by the individual cross-border bus / rail / rapid-transit railway services in the EuRegio and also by some other CPS (i.e. free of charge bicycle transport in trains; mutual recognition of tariffs). This means in practice that none of the service-responsible organisations involves actors from the other side of the border in their decision-making structures for managing the services. As regards the very nature of the services and also their actual modes of delivery, however, **several variants and “hybrid” sub-types”**[72] **can be distinguished.**

[71] Landratsamt Berchtesgadener Land (2018)

[72] These hybrids slightly differ from the general sub-types mentioned in the Inception Report and the Final Report of the CPS Project..

- Most CPS on public local transport are **completely new services** that are filling a gap in the domestic offer of public local transport services. These services are either delivered by a single service provider from one side of the border (**unilateral delivery**)[73] or jointly by transport operators from both sides and sometimes also by collaborating with other public authorities **("hybrid": cooperative delivery**)[74].
- Some CPS on public local transport are a **border-crossing extension of existing domestic public services** that create benefits for both sides of the border. This is the case for the rail / rapid-transit railway services, which are most often delivered by a single service provider from one side of the border (**unilateral delivery**)[75] and in one case also jointly by transport operators from both sides (**"hybrid": cooperative delivery**)[76]. Also the mutual recognition of domestic tariffs by different transport operators is an extension of existing domestic public services, which also involves a cooperative element at the level of the delivery process (i.e. partnership of transport operators with the "Salzburg Transport Association SVV").

(2) A integration model is only applied for the new CPS that improves passenger information through regularly publishing a map on existing public transport services. For this CPS, the EuRegio is entrusted by the other participating partners with the delivery of the service. The EuRegio is responsible for the management, coordination and delivery of the related work and its final outcome (i.e. joint delivery / joint management).

4.1.6 Conclusions, elements of good practice and outlook

The cross-border public local transport line services by bus and rail have developed within the EuRegio during a longer time period. With the successive expansion and completion of the rapid-transit railway Salzburg (S-Bahn Salzburg) at the end of 2017, however, the availability of frequent and rapid direct connections as well as the passenger volume on cross-border local transport services have significantly increased. The current cross-border service offer comprises a total of 15 direct lines (bus, rail, S-Bahn) that are criss-crossing different parts of the EuRegio territory. In addition, also efforts have been made to further improve passenger information and the quality of individual line services. All this resulted in a considerable improvement of the overall quality and effectiveness of local public passenger transport within the EuRegio, both for the general public and also for specific target groups.

A first step towards a cross-border integration of domestic tariff systems for local public passenger transport was made already in 1997, when the common tariff of the "Salzburg

[73] e.g. regular cross-border bus line 260, cross-border school bus lines 112 and 836, "City Bus Laufen" and the tourism bus line "Mozart-Express".

[74] e.g. regular cross-border bus lines bus lines 24, 180 and 840; cross-border tourism line "Alm-Erlebnis-Bus"; free of charge bicycle transport by train within the EuRegio.

[75] e.g. all rail transport lines (KBS 951 München-Salzburg; KBS 945 Landshut-Mühldorf-Salzburg, REX) and linie S2 of the the S-Bahn Salzburg.

[76] e.g. linie S3 of the the S-Bahn Salzburg.

Transport Association" SVV was extended to the Bavarian county of Berchtesgadener Land. Meanwhile, the transport companies operating cross-border line services have mutually recognised their domestic associative or in-house tariffs and also became cooperation partners of the SVV, which operates since 2016 under the new name “Salzburg Verkehr”. However, a genuine cross-border transport tariff association does not yet exist in the EuRegio.

Based upon the above-said, one can summarise **the most important elements of good practice** as follows:

(1) there is a strong and coherent linkage between spatial planning and transport planning at the regional and cross-border levels, on the one hand, and the actual development of cross-border public local transport services, on the other hand;

(2) the existing cross-border bus lines and rail / rapid-transit railway lines establish a dense network of direct conections (i.e. no necessity to change at the border), which considers different territorial needs within the EuRegion (i.e. urbanised areas, rural/mountainous areas) and also particular user needs (i.e. general public, commuters, pupils, tourists);

(3) further quality improvements of existing cross-border line services are realised (e.g. passenger information; free of charge bicycle transport by rail; combined rail/bus ticket with reduction on entrance fees at tourism destinations; service improvement on a tourism bus line), some of which are realised or initiated by the EuRegio in close cooperation with partners from the public transport sector;

(4) there is a strong common political will for territorially widening and further integrating / harmonising the current domestic transport tariff systems, which shall be achieved through establishing an “EuRegio transport / tariff association” (EuRegio-Verkehrsverbund / Tarifverbund) that may even involve the setting up of a joint structure with an own legal personality (i.e. an EGTC).

As regards the **future perspectives** for cross-border public local passenger transport in the EuRegio, it can be observed that options for a further expansion of the service offer and also for a further integration of domestic tariff systems at a wider territorial scale are explored since several years already. These efforts are informed by the results of two study projects, which were realised with support from the Interreg programme Bavaria-Austria (2007-2013, 2014-2020)[77]. The suggested development options are currently subject to intense political and administrative discussions, both within the respective domestic contexts and also in an EuRegio-wide perspective.

[77] Interreg IV-A project "Euregio Bahnen (ERB) Salzburg-Bavaria-Upper Austria", realised between January 2012 and June 2014. The Interreg V-A project “EuRegio-Verkehrsverbund“, realised between December 2015 and June 2016.

4.2 Cross-border wastewater treatment

Cross-border cooperation in the field of wastewater treatment started within the EuRegio already in the 1970s and has further evolved during the following decades, both in terms of scope and approaches adopted. Currently, there are three CPS: (1) the purification of sewage from various border-close Bavarian cities / municipalities by the Greater Salzburg wastewater treatment association at the “Siggerwiesen” wastewater treatment plant, (2) the purification of sewage from the Bavarian municipality of Schneizlreuth by the Pinzgauer Saalachtal wastewater treatment association at the wastewater treatment plant in Unken and finally the (3) the purification of sewage from the Austrian municipality of Großgmain by the neighbouring municipality of Bayerisch Gmain at its own wastewater treatment plant.

4.2.1 Cross-border needs and opportunities motivating the setup of CPS

Within the EuRegio, cooperation in the field of sewage water treatment takes place between smaller and neighbouring municipalities that are located in the medium-high mountain areas along the common border and also between neighbouring cities/municipalities in the valleys of the border rivers Salzach and Saalach.

A motive for initiating CPS was and still is closely linked to **the particular topographical conditions along larger parts of the EuRegio border.** In many of the medium-high mountain areas, it simply is not cost-efficient and effective to pump sewage water from isolated estates of a small municipality upwards into another municipal sewage collector or plant located relatively far away in the same country, rather than to pass it across the border through a connecting sewer for cleaning in a wastewater treatment plant that is located lower and also more close-by in the neighbouring country.

A good example illustrating this motivation for cooperation is the treatment of sewage from the Bavarian municipality of Schneizlreuth at the wastewater treatment plant in Unken, which is operated by the Austrian wastewater treatment association “Pinzgauer Saalachtal” (RHV - Reinhalteverband Pinzgauer Saalachtal). Schneizlreuth is in terms of population the smallest municipality in the Bavarian county of Berchtesgadener Land (1,333 inh./2016), but in terms of territory one of the largest (107 km^2). Cooperation started in 2005 with the connection of the small and elevated sub-community Melleck (140 inhabitants) and was further expanded in 2013/2014 with the connection of nearly all other sub-communities of Schneizlreuth[78].

Also the CPS on joint wastewater treatment between the immediately neighbouring border municipalities of Bayerisch Gmain (DE) and Großgmain (AT) can be explained by this motivation. Both municipalities are located in a valley and started cooperation already in 1971, mainly because on the Austrian side the topographical conditions and longer distances to the next domestic treatment facility have made a close-by and cross-border solution more attractive.

[78] Salzburg24 (2014)

Another important **motive** for establishing cooperation in the EuRegio arose, if **the upholding of a not any longer adequate municipal wastewater treatment plant required substantial public investments** for a quality improvement and/or capacity enlargement. An attractive alternative solution to domestic infrastructure upgrading emerged if there was the possibility of treating wastewater more cost-effectively at plant in the neighbouring country, This, however, presupposed that all involved stakeholders could also benefit from such an arrangement.

The above-described motive was a strong driving force for setting up the third CPS, which has also become the predominant mode of cooperation: the purification of sewage from various Bavarian municipalities at the “Siggerwiesen” wastewater treatment plant that is operated by the Greater Salzburg wastewater treatment association (RHV - Reinhalteverband Großraum Salzburg). This CPS is the result of a complex evolutionary process that developed in two directions (see: map 4-2).

The first direction is “internal” to the RHV Greater Salzburg, which cleans sewage water of the city of Salzburg and of a number of other member municipalities on the Austrian side (i.e. Anif, Anthering, Bergheim, Elixhausen, Elsbethen, Eugendorf, Grödig, Hallwang, Koppl, Puch and Wals-Siezenheim)[79].

At the border river Saalach, directly opposite to the RHV member municipality of Wals-Siezenheim, the Bavarian municipality of Ainring originally operated an own wastewater treatment plant that needed substantial public investments for its further enlargement at the beginning of the new millennium. Due to this, Wals-Siezenheim agreed to receive sewage from Ainring and to transfer it for purification to the “Siggerwiesen” wastewater treatment plant. The connection of Ainring to the sewer of Wals-Siezenheim was decided in 2003 and realised in the following, while the Ainring plant was decommissioned in 2005. Since Mai 2005, also wastewater from a smaller settlement part at Freilassing (i.e. “Bruch” estates) are transferred via the Ainring sewer to the Austrian side[80]. However, this transfer of sewage was not by all positively perceived because negative reactions emerged in the RHV member municipalities of Anthering and Bergheim shortly before the connection decision. Both municipalities are located in the immediate neighbourhood of the “Siggerwiesen” treatment plant and their inhabitants were already since a while exposed to the bad smell of wastewater, which they now feared would further increase with the "imported" wastewater from Bavaria. Nevertheless, the RHV Greater Salzburg agreed to the wastewater transfer on 1 October 2003, albeit with two negative votes coming from the two above-mentioned RHV member municipalities[81]. Already some years later, this border-crossing cooperation was very positively judged by the Austrian Court of Auditors and in 2014, around 1 million m³ of

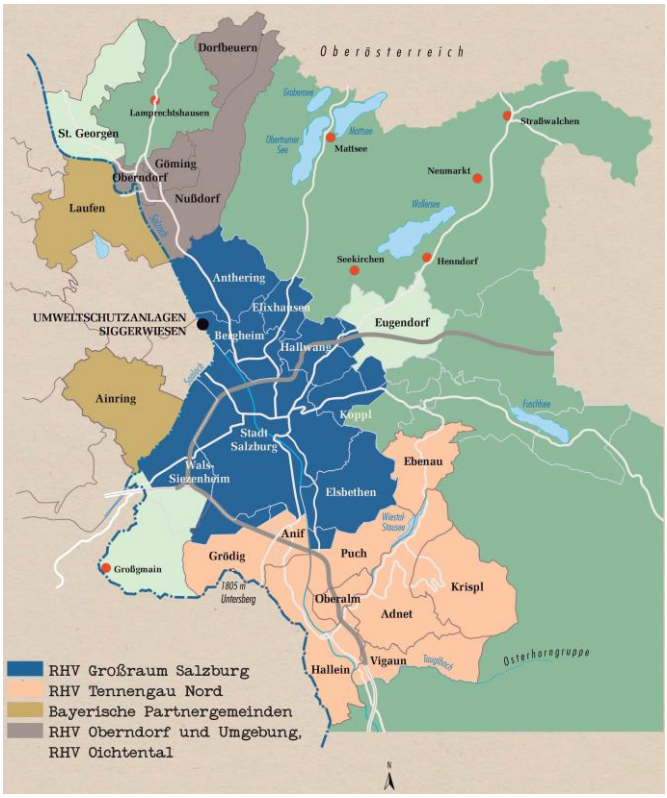
[79] Land Salzburg (2018a); Reinhalteverband Großraum Salzburg (2018)

[80] BGL-WIKI (2018)

[81] SPÖ, Ortsorganisation Anthering (2003)

Bavarian wastewater from Ainring and from some estates at Freilassing-Bruch were treated per year at the “Siggerwiesen” plant[82].

Map 4–2 Austrian wastewater treatment associations (RHV) along the EuRegio border



Source: Reinhalteverband Großraum Salzburg (2016b), p.7

The second direction is “external” to the RHV Greater Salzburg and related to the cooperation that was developed with other neighbouring wastewater treatment associations in the Land Salzburg (i.e. with RHV Tennengau-Nord and RHV Oberndorf-Umgebung), in order to take over their sewage for purification at the wastewater treatment plant in “Siggerwiesen”.

Cooperation between the RHV Greater Salzburg and the RHV Tennengau-Nord is already long-standing[83] and its wastewater is directed through the sewer network of the city of Salzburg to the “Siggerwiesen” treatment plant, for which the RHV Tennengau-Nord holds a statutory fixed capacity of 120,000 population equivalents. Because the RHV Tennengau Nord has no own wastewater treatment plant, its main tasks are today the collection and discharge of wastewater as well as the construction, ongoing maintenance and rehabilitation of sewers. The support to a conservation of local sewer networks is regulated by maintenance

[82] Rechnungshof Österreich (2010), p.216 ; Heimatzeitung (2014)

[83] On a contractual basis, the RHV Greater Salzburg took over wastewater treatment from the RHV Tennengau-Nord already in 1977. See: Rechnungshof Österreich (2010), p.108

contracts, wherefore the association acts as channel operator in all member municipalities[84]. With the construction of sewers that connect some isolated and smaller settlement parts of the Bavarian municipality of Marktschellenberg (i.e. "Zill" estates at the end of the 1980s; "Barmstein" estates in 2012[85]) to the main collector of the RHV Tennengau-Nord, the association also transfers sewage from Bavaria to the wastewater treatment plant "Siggerwiesen".

Cooperation between the RHV Greater Salzburg and the RHV Oberndorf-Umgebung is more recent and also covers the treatment of wastewater from the Bavarian city of Laufen at the "Siggerwiesen" plant. Since 1986, the RHV Oberndorf-Umgebung operated a wastewater treatment plant for the Oberndorf area and the city of Laufen, where also sewage from the RHV Oichtental has been cleaned since the beginning of the 1990s. The wastewater treatment plant with a population equivalent of 19,500 had been exposed to a large amount of sewage generated by some food-producing companies and was therefore often overburdened. In the course of the planning for a necessary capacity expansion of the plant, the RHV Greater Salzburg investigated and proposed, as an alternative, the transfer of wastewater to its treatment plant "Siggerwiesen". This option was then adopted as the cheapest solution[86] and necessary connection works on the Austrian side were finalised in 2008/2009, also with a financial participation of the city of Laufen[87]. In 2014, for example, 650,000 m³ of sewage from Laufen were cleaned at "Siggerwiesen"[88].

4.2.2 General and/or theme specific legal framework conditions for CPS

The general and theme-specific legal context for wastewater treatment in Austria and Germany is set by a wide range of rules and quality standards originating from the nationally transposed EU environmental and water-related legislation[89], which shapes today around 80% of the Member States' environmental laws. Within the EuRegio, cross-border wastewater treatment works smoothly since decades and did not require the previous conclusion of a general or theme-specific interstate agreement or of a regional cooperation agreement between the Länder Bavaria and Salzburg.

The most common formal basis that regulates cross-border cooperation in the field of wastewater treatment **is a bilateral local contract on the border-crossing transferral of sewage (Einleitevertrag).** These contracts are usually relative short documents that stipulate

[84] The RHV is also charged with drinking water supply for the city of Hallein and acts as operator of the related infrastructure network. See: Reinhalteverband Tennengau Nord (2018)

[85] Berchtesgadener Anzeiger (2012)

[86] The contract between the RHV Oberndorf-Umgebung and the RHV Greater Salzburg of September 2005 stipulated that the RHV Greater Salzburg undertakes the construction of the transfer system at its own expense and will for this also make use of public funding.

[87] Rechnungshof Österreich (2010), pp.109, 110

[88] Heimatzeitung (2014)

[89] For an overview on water-related EU legislation see: European Commisssion (2018); EEA – European Environment Agency (2016)

basic conditions of the transfer-arrangement and define the cost that a “sewage sending” municipality has to pay to the “sewage receiving/treating” municipality or organism on the other side. First contracts[90] were concluded on 17. April 1974 between the municipalities Bayerisch Gmain and Großgmain, on 29. September 1982 between the city of Laufen and the RHV Oberndorf-Umgebung as well as on 13./28. October 1988 between the municipality of Martktschellenberg and RHV Tennengau-Nord for the border-close and isolated estates “Zill”. From time-to-time, these contracts are adapted in order to reflect changing context conditions (e.g. price for m³ of sewage). However, the administrative effort linked to such adaptations is considered to be minimal[91].

A more substantial effort to overcome legal hurdles for setting up a CPS **had only to be made in case of the small Bavarian municipality of Schneizlreuth,** because it wished to become a full member with voting rights in the RHV Pinzgauer Saalachtal. For this to become reality, differences between German and Austrian water laws had to be reconciled in a complicated and 3-years lasting process. However, membership had finally become possible in 2013 because higher-level administrative approval authorities were willing to support a pragmatic legal solution (see: section 4.2.5)[92].

4.2.3 The production base for a provision of CPS

Cross-border wastewater treatment in the EuRegio is realised by using **“hard” infrastructure with a public supply function** that is located on both sides of the border. This includes fixed infrastructure assets such as the wastewater treatment plants with their technical equipment and the different sewage collector systems at variable length (i.e. domestic sewers or collection basins; border-crossing sewer connections) or other technical installations (e.g. pumping stations; pressure lines), but also specialised vehicles and mobile equipment for an inspection, maintenance and servicing of local sewer systems as well as the specialised personnel that operates all fixed and mobile infrastructures on a day-to-day basis.

Many of these infrastructures were already existing in the respective regional / local contexts (i.e. plants, sewage collectors, vehicles etc.), but others had to be newly build (esp. cross-border connection sewers ; local sewers).

Different organisations are owning the three wastewater treatment plants directly involved in a cross-border purification of sewage, which are also characterised by different operational parameters (e.g. nominal capacities and capacity usage levels, cleaning performance). Box 4-8 below presents a short profile for the RHV Greater Salzburg and its “Siggerwiesen” plant[93],

[90] Niedobitek (2001), p.92

[91] Evidence from discussions at the „CPS Stakeholder Workshop“

[92] Salzburg24 (2014); Salzburger Nachrichten (2013) ; EuRegio Salzburg-Berchtesgadener Land-Traunstein (2013)

[93] Reinhalteverband Großraum Salzburg (2018) ; Land Salzburg (2018a) ; Heimatzeitung (2014)

for the RHV Pinzgauer Saalachtal and its plant at Unken[94] as well as for the municipality of Bayerisch Gmain and its local plant[95].

Box 4-8 Organisations and plants involved in cross-border sewage water treatment

The Greater Salzburg wastewater treatment association (RHV - Reinhalteverband Großraum Salzburg) was established in 1974 and is with an area of 185 km2 one of Austria's largest wastewater treatment associations. The RHV operates the wastewater treatment plant "Siggerwiesen" in Anthering, which is one of the largest biological wastewater treatment plants in Austria. The plant is in operation since 1986 and had been extended / adapted in two periods (1994-1998; 2003-2004). It has a capacity of 680,000 population equivalents (or 103.600 m³ of wastewater per day at dry weather conditions). The plant cleans about 40% of the total wastewater produced in the Land Salzburg (i.e. per year around 29 million m³ of wastewater). The "Siggerwiesen" plant meets all legal requirements and has a stable cleaning performance. The increase in concentrations of essential ingredients in the border river Salzach through the plants' discharge water is small. The plants' capacity utilisation is currently at 70%, but in peak months up to 100%. The RHV Greater Salzburg is also responsible for the construction and operation of an association collector network with 143 km in length, into which the local sewer systems of its member municipalities (total: 394 km) discharge wastewater for treatment at the "Siggerwiesen" plant. The association also carries out the inspection, maintenance and servicing of the 537 km of sewers (i.e. own association collector network; local sewer systems as external service provider).

The Austrian wastewater treatment association "**Pinzgauer Saalachtal"** (RHV - Reinhalteverband Pinzgauer Saalachtal) operates two wastewater treatment plants, one in Unken and one in Saalfeld. The Unken wastewater treatment plant is in operation since 1993 and has a capacity of 24,500 population equivalents (or 4,830 m³ of wastewater per day at dry weather conditions). Since 2003, it has a very good cleaning performance and the increase in concentrations of essential ingredients in the border river Saalach through the plants' discharge water is negligible. The long term development of the treated sewage water volume shows in overall terms only little increases. However, a small increase is observed since 2015 because the Bavarian municipality Schneizlreuth was connected to the plant with about 800 population equivalents in 2013/14. Nevertheless, the plant in Unken is still only moderately utilised (i.e. capacity utilisation 40%, peak months up to 55%).

Since 1972, the Bavarian municipality of **Bayerisch Gmain** operates a local wastewater treatment plant that is also used by the Austrian neighbouring municipality Großgmain. After subsequent extensions and improvements in 1993 and 2002, the fully biological wastewater treatment plant has generally complied with technical requirements and around 99% of all households in the municipality of Bayerisch Gmain are connected to it via the public sewer system. A further optimisation and upgrading of the treatment facility was decided in 2015 and is realised with substantial joint investments during the years 2016-2018 (i.e. EUR 3.6 million).

Border-crossing connection sewers were newly established between the neighbouring municipalities of Bayerisch Gmain and Großgmain, between Ainring and Wals-Siezenheim under the border river Saalach as well as between the city of Laufen and Oberndorf under the border river Salzach. Further connections exist between Schneizlreuth and Unken as well as between some small border-close estates of Marktschellenberg (Barmstein, Zill) and the main collector of the RHV Tennengau-Nord.

Infrastructure works for establishing border-crossing connection sewers can be substantial and costly, but sometimes also be complicated due to particular topographical / natural conditions. A first example is the municipality of Schneizlreuth in the Bavarian county

[94] Land Salzburg (2018a); Reinhalteverband Pinzgauer Saalachtal (2018)

[95] Gemeinde Bayerisch Gmain (2018) ; Passauer Neue Presse (2016) ; BGLand24.de (2015a):

Berchtesgadener Land, which ensures the connection of its very small and scattered sub-communities to the treatment plant in Unken by a sewer system with a total length of 13 kilometres (incl. also a pressure pipe)[96]. This extended system allows transmitting around 30,000 m³ of wastewater per year for treatment at the plant in Unken[97].

Another example is the 1,407 meter long connection sewer for the Marktschellenberg "Barmstein" estates in Bavaria to the Austrian side, which was constructed in 2012. The sewer connects six buildings and a restaurant at Barmstein to the main collector of the RHV Tennengau-Nord in Austria and is mainly located on the Bavarian side. The construction works for this sewer were complicated and delayed due to the steepness of the alpine terrain, but also because several private water sources existing in this area had to be avoided. The total cost for this connection amounted at EUR 430,000 (public financing), to which also EUR 51,500 of private contributions paid by the connected households have to be added[98].

Much more important than cost for the initial construction of infrastructures **is cost associated with the ongoing operation of existing wastewater treatment facilities and the maintenance of sewer systems or connection sewers.** Especially the regular inspection of sewers require that specific vehicles and mobile technical equipment are either directly owned or hired as external services, but also necessary repair works represent a financial burden especially for smaller municipalities. The level of operation cost is therefore an important issue under all three CPS, because they occur over decades and directly affect the fees that are charged to the citizens.

In case of the CPS Bayerisch Gmain / Großgmain, the basic practice is that each municipality bears the responsibility and cost for the ongoing maintenance of its own sewer system[99]. A more advantageous arrangement exists in case of the small Bavarian municipality of Schneizlreuth, which was in the past also sole responsible for organising and paying the maintenance of its sewers. This task disappeared with the municipality's adhesion to the RHV Pinzgauer Saalachtal, because maintenance of its 13 kilometres of sewer network is now realised by the RHV as part of the municipality's membership package[100]. A third model exists in case of the CPS that involves the RHV Greater Salzburg: the latter also acts as external provider for local sewer maintenance and inspection services, which generate an additional revenue for the association. In 2016, for example, various maintenance services were provided to the Bavarian municipality of Ainring[101].

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[96] The system covers the older connection of the sub-community Melleck as well as the recently built sewers in the sub-communities Schneizlreuth, Unterjettenberg and Fronau. The sub-community Weißbach still has its own wastewater treatment plant.

[97] Salzburger Nachrichten (2013); Reinhalteverband Pinzgauer Saalachtal (2018); EuRegio Salzburg-Berchtesgadener Land-Traunstein (2013)

[98] Berchtesgadener Anzeiger (2012)

[99] Gemeinde Bayerisch Gmain (2013)

[100] Salzburg24 (2014)

[101] Reinhalteverband Großraum Salzburg (2016b), p.15

Challenges for cooperation can emerge from a necessary modernisation or upgrading of a jointly used wastewater treatment plant. This occurred only in the case of the CPS that involves the municipalities Bayerisch Gmain and Großgmain. At the end of 2015, both municipalities decided a further optimisation / upgrading of the wastewater treatment plant in Bayerisch Gmain for which the related investments are shared according to a contractually agreed rule[102]. Before this decision was taken, however, long-lasting and also controversial discussions had taken place between the two sides: issues that arose were a questioning of the required amount of investment for the modernisation (esp. by a higher level administration co-funding local investment), the screening of alternative options for wastewater treatment by the neighbouring Bavarian city of Bad Reichenhall or even a stop of the cooperation and a unilateral operation of the plant by Bayerisch Gmain. The finally decided and jointly financed upgrading of the local plant with a total volume of around EUR 3.6 million represents a considerably burden for the budgets of both municipalities during the years 2016-2018. In case of the 2016 investment budget of Bayerisch Gmain, for example, expenditure of EUR 1 million was earmarked for this task and has been by far the largest individual budget item[103].

4.2.4 CPS tasks and intervention approaches to address cross-border needs

The three existing CPS have **a basic supply task** for the concerned local population (i.e. connection of households to sewers and treatment facilities) and fulfil at the same time **a conservation task** due to their important role for ensuring water quality of the two border rivers Saalach and Salzach, into which cleaned wastewater is discharged.

All CPS address cross-border needs with an **intervention approach that aims to improve the effectiveness and efficiency of local public service provision.** These approaches also **entail clear "win-win" constellations for all sides concerned.**

A first example is the Bavarian municipality Ainring, which is connected since 2003 to the "Siggerwiesen" plant in Anthering via the sewers of the neighbouring Austrian municipality Wals-Siezenheim[104]. Ainring originally had an own sewage water treatment plant that went into operation in 1987, but at the end of the 1990s it became clear that substantial expansion measures were needed to cope with the strong increase of the municipalities' resident population. Ainring would have had to expand its wastewater treatment plant to almost the double with a related cost volume of about EUR 3 million, while a connection to the neighbouring Austrian municipality of Wals-Siezenheim amounted to only about one third of that cost. Wals-Siezenheim agreed to receive sewage water from Ainring via a cross-border connecting sewer below the border river Saalach, since this municipality did not even use half its statutory available and also paid capacity of 57,000 population equivalents for the

[102] The current local contract on a border-crossing transferral of sewage cooperation provides that cost for investments are distributed according to the actually used population equivalents. At the end of 2013, these shares were at 60% for Bayerisch Gmain and at 40% for Großgmain.

[103] Gemeinde Bayerisch Gmain (2013); Passauer Neue Presse (2016); Heimatzeitung (2016); BGLand24.de (2015a)

[104] Mixed water from Ainring continues to be discharged into the river Saalach and sewage from some sub-communities of the municipality Ainring are cleaned at the wastewater treatment plant Freilassing.

"Siggerwiesen" plant[105]. After the connection was realised, also sewage from some border-close estates at Freilassing ("Bruch") are disposed since May 2005 via the Ainring sewer system to Austria. Shortly afterwards, in June 2005, the municipal sewage water treatment plant in Ainring could be decommissioned after only 18 years of operation[106].

The cross-border treatment of Bavarian sewage water also creates financial benefits for the RHV Greater Salzburg. Its annual report for 2016 clearly highlights that aside the contributions for operating and manufacturing costs paid by its members and the RHV Tennengau-Nord (incl. also wastewater from the Marktschellenberg estates of "Barmstein" in Bavaria) as well as revenues generated by other services and operations, also the takeover of wastewater from the RHV Oberndorf Umgebung and the Bavarian city of Laufen has had since years a positive financial impact on the association's budget[107].

The last example is the CPS that involves the small Bavarian municipality of Schneizlreuth, which has established an innovative cooperation with its Austrian neighbours though its full membership in the RHV Pinzgauer Saalachtal. The municipality has opted for the construction of a connecting sewer with a length of 13 km to have its wastewater treated by the plant in Unken, as a connection sewer to the next neighbouring Bavarian treatment plant in the town of Bad Reichenhall would have even been longer and thus costed more. Also the Austrian partners profit of this model, because the "imported" Bavarian wastewater ensures a better capacity utilisation of the treatment plant in Unken. Schneizlreuth does not simply pay a fee for each m³ of sewage treated at the plant in Unken, because it contributes as every member to the full operational cost of the RHV that is now divided among a higher number of associated municipalities[108]. As regards eventual infrastructure cost linked to the wastewater treatment plant in Unken, however, Schneizlreuth does not have to contribute[109].

4.2.5 Organisational structures and processes for delivering CPS

The organisation and delivery of cross-border sewage water treatment in the EuRegio follows in all cases **a centralised model (or a "shared service centre" model).** This means in practice that the organisational / management structures and also the ongoing task delivery are concentrated on one side of the border. Although service provision takes place in all three CPS through a border-crossing extension of an existing domestic public service, **two different sub-constellations are observed.**

[105] In 2003, Wals-Siezenheim used only 22,000 population equivalents of its statutory capacity at the "Siggerwiesen" plant. For making better use of its contingent, the municipality planned to take over the wastewater from Ainring for the next 20 years. On the Bavarian side some 9,000 population equivalents incurred in 2003, but a long term rise to 15,000 population equivalents was already expected.

[106] BGL-WIKI (2018) ; SPÖ, Ortsorganisation Anthering (2003)

[107] Reinhalteverband Großraum Salzburg (2016b), p.6

[108] Salzburg24 (2014) ; Salzburger Nachrichten (2013)

[109] Evidence from discussions at the „CPS Stakeholder Workshop"

(1) Two CPS are delivered and managed by a service provider on one side of the border for the benefit of both sides. This is the case for the purification of sewage from various Bavarian municipalities (i.e. Ainring, Freilassing/Bruch, Laufen, Marktschellenberg/Barmstein & Zill) by the RHV Greater Salzburg at the wastewater treatment plant "Siggerwiesen" as well as for the purification of sewage from the Austrian municipality of Großgmain at the local wastewater treatment plant of Bayerisch Gmain. The "sewage sending" municipalities usually pay a pre-agreed amount per cubic meter of wastewater fed into the sewer or treatment plant of the "sewage receiving/treating" municipalities or organisms on the other side of the border.

(2) One CPS is delivered by a service provider on one side of the border for the benefit of both sides, but actors from the other side also directly participate in the management and decision-making structures of the service. This is the case for the purification of sewage from the municipality of Schneizlreuth at the wastewater treatment plant in Unken, which is owned by the RHV Pinzgauer Saalachtal. The Bavarian municipality is a full member of the RHV Pinzgauer Saalachtal, but its membership is ensured indirectly through a private company that the municipal administration of Schneizlreuth has set up under Austrian law (Abwasserentsorgung Schneizlreuth GmbH[110]). This specific legal solution had become necessary since under Austrian water law only Austrian municipalities and companies can become members of a wastewater treatment association[111]. This solution was accepted and formally approved, also because it was evident that the municipality's membership would not substantially alter the "balance of powers" within the management and decision making bodies of the RHV[112].

As all other Austrian member municipalities of the RHV Pinzgauer Saalachtal, Schneizlreuth is now represented in the association's assembly of members (Mitgliederversammlung) by the mayor of the Bavarian municipality, who is at the same time also the director of the "Abwasserentsorgung Schneizlreuth GmbH". The assembly determines the fundamental matters of the RHV (e.g. budget; approval of the clearance of accounts; decisions on loans and service orders for a net value over € 200,000). Furthermore, the mayor of Schneizlreuth is one of the 10 members of the executive committee (Vorstand). This is the managing body of the RHV, which discusses and decides on all current business matters as well as on the RHV's staffing[113].

[110] The municipality is the sole shareholder/owner of the commercial enterprise "Abwasserentsorgung Schneizlreuth GmbH", which has its seat in Unken (AT). It is registered at the district court 5020 Salzburg under the commercial register number FN 384567 s.

[111] Kommunalnet (2013); Salzburg24 (2014)

[112] Evidence from discussions at the „CPS Stakeholder Workshop"

[113] Reinhalteverband Pinzgauer Saalachtal (2018)

4.2.6 Conclusions, elements of good practice and outlook

Cross-border cooperation in the field of wastewater treatment exists within the EuRegio already since the 1970s and was substantially expanded during the following decades. Cooperation was partly initiated because of the specific topographical conditions along larger parts of the common border (i.e. scattered and border close settlements in the valleys and mountainous parts of the EuRegio), but also because a border-crossing treatment of sewage represented an attractive alternative to a costly modernisation of existing treatment facilities on the Bavarian side.

Although a specific legal framework for this cooperation does not exist (i.e. thematic inter-state agreement) and also formalisation of cooperation is intentionally kept very simple in most of the cases (i.e. only conclusion of bilateral service provision contracts), the three CPS are functioning smoothly since many years. There have indeed been occasional differences of opinion in the past (e.g. fears of the local population about "imported" wastewater from Bavaria; different views on investment cost for the necessary modernisation of jointly used municipal wastewater treatment plant), but in the meanwhile a consensus on the usefulness of this cooperation has increasingly developed among the involved institutional actors. This also appears from contributions made at the CPS stakeholder workshop, which indicate that especially a further expansion of joint wastewater treatment at the “Siggerwiesen” plant is currently explored or even negotiated with some other Bavarian municipalities[114].

Our in-depth assessment of the three CPS shows that all parties involved are drawing clear benefits from this cooperation (i.e. various kinds of cost savings, better capacity use of existing wastewater treatment facilities, additional revenues etc.) and that existing CPS are also improving the effectiveness and efficiency of local public service provision in the concerned cross-border zones (i.e. avoidance of “double infrastructures”; higher connection of households to treatment facilities; better protection of water resources etc.).

Based upon the above-said, one can summarise **the most important elements of good practice** as follows:

(1) the strong will to set up and maintain common solutions to specific problems and challenges in the border region;

(2) the context- and also needs-oriented establishment of different cooperation models;

(3) the smooth practical functioning of these cooperation models on the basis of a relatively low degree of formalisation;

(4) the benefits emerging from these different cooperation models for all actors involved.

Nevertheless, there are a number of challenges and opportunities for future joint wastewater treatment in the EuRegio that will be analysed in following chapter (see: section 5.1).

[114] Evidence from discussions at the „CPS Stakeholder Workshop“

4.3 Cross-border healthcare and emergency medical care services

4.3.1 Cross-border needs and opportunities motivating the setup of CPS

A general motive for setting up CPS in the field of healthcare is the compliance with service obligations resulting from EU legislation on this matter, which has considerably evolved especially since 1986[115] and is today an integral part of national legislations on public healthcare systems. This motive does not exist for emergency medical services, as EU legislation has only a limited influence on this topic (see: section 4.3.2).

Another important motive for setting up CPS on healthcare and medical emergency care are local shortcomings or cross-border needs that emerge from geographical / physical features or specific structural developments in a cooperation area. Concrete examples are long distances to a domestic healthcare or medical emergency service, the lack of medical specialist services in a border area or even the closure of a hospitals due to low population density[116].

In the EuRegio, map 4-3 shows that the particular geographical / physical features (i.e. medium and high mountains, valleys, border rivers with few crossing points etc.) are resulting in **different levels of accessibility by car of various healthcare-related services (i.e. hospitals, doctors, pharmacies).**

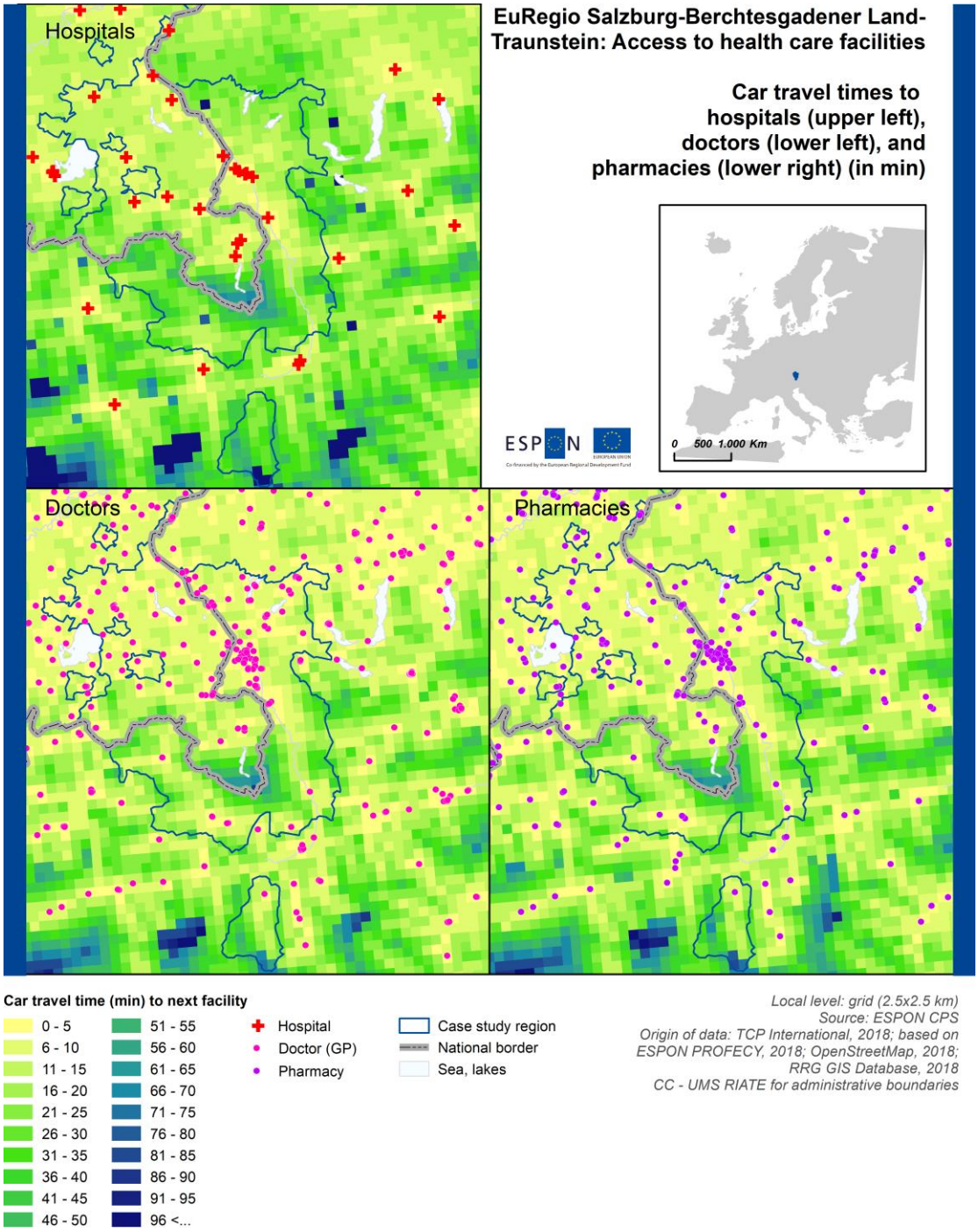
Across all three service types, especially the central and north-western part of the EuRegio is characterised by a high level of service availability and also by high levels of service accessibility (i.e. with driving times ranging from below 5 miutes to around 15 minutes). An exception to this situation are only some areas in the north-eastern part on the Austrian side, where especially the accessibility of hospital services is markedly lower (i.e. with driving times between 25 to 35 minutes).

The situation is significantly different in case of the border-close pre-alpine and high-alpine areas in the southern and south-western parts of the EuRegio, which are also less densely populated. Here, the general availability of all three types of service facilities is very reduced, which also leads to low levels of service accessibility by car (i.e. with diving times clearly above 35 minutes or even significantly higher).

[115] In 1986, the Single European Act (SEA) introduced legislation intended to protect the health and safety of workers in an integrated single market. During the years 1986 to 1997, an EU health policy was gradually introduced. The Maastricht Treaty of 1992 introduced an article defining the Community's powers in public health matters (Article 129), also providing for a more coordinated health policy at EU level. The Amsterdam Treaty of 1997 enabled an extension of the legal basis for the EU's activities and the adoption of binding decisions in order to promote regional balance in matters of public health (Article 6). The improvement of human health has become an area of shared competence between the Member States and the EU. The legally binding Charter of Fundamental Social Rights adopted in December 2000 sets out in Article 35 the right to healthcare, i.e. access to preventive healthcare and the right to benefit from medical treatment, along with a high level of human health protection.

[116] Wismar (2016)

Map 4–3 Availability of and access to different healthcare services in the EuRegio

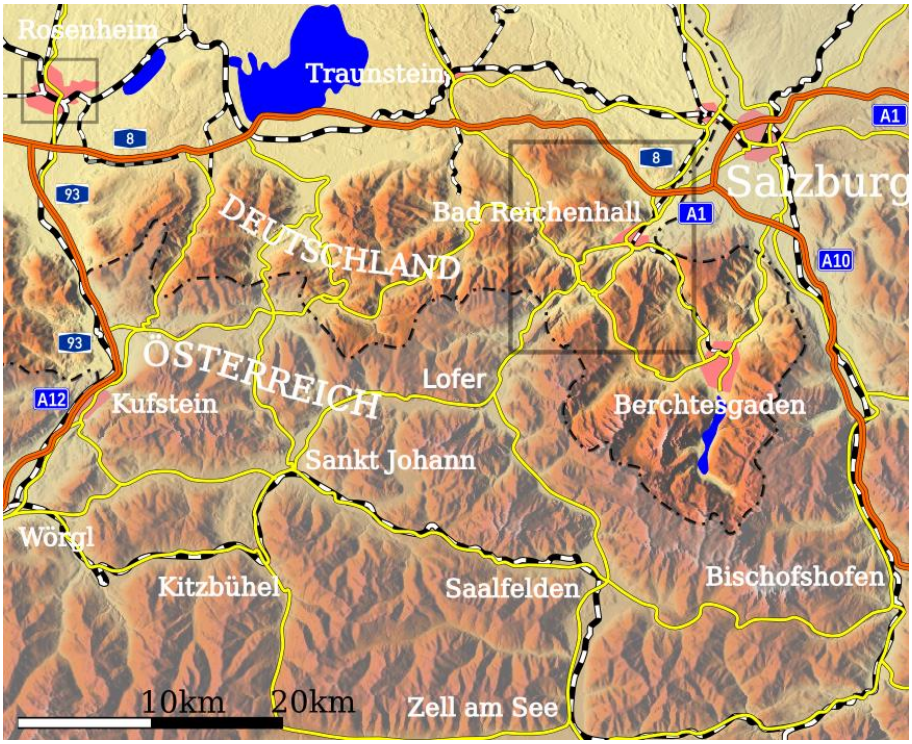


The particular geographical / physical features of the EuRegio **are also complicating a domestic and cross-border provision of emergency medical services.** This is evident in the southern part of the EuRegio and especially in the mountainous border zone around the so-called “Small German Corner” (kleines deutsches Eck). The latter is crossed by a 22 kilometer long road connection on Bavarian territory (B 21), which is also the shortest route

from the city of Salzburg to the westernmost district of Pinzgau in the Land of Salzburg[117] (see: map 4-4).

In this area, emergency services from the other side of the border can reach faster several municipalities in Bavaria (e.g. Marktschellenberg, sub-community Zill of Marktschellenberg) and Salzburg (Großgmain)[118]. But also for emergency aid in county of Berchtesgadener Land, the Bavarian Red Cross (BRK) units from the cities of Freilassing or Bad Reichenhall are frequently crossing the border and drive on the Austrian side in order to arrive more quickly at remote areas within that county[119].

Map 4–4 The "Small German Corner" (grey square) and the sourrounding border zone



Source: Wikipedia (2018j)

4.3.2 General and/or theme specific legal framework conditions for CPS

There is a general legal framework for CPS in the field of healthcare and emergency medical services, but the legal sources for each theme and also the respective focus on CPS are very different.

[117] This road connection leads from the southwestern outskirts of Salzburg city at Wals-Siezenheim over the border, then in Bavaria on the German federal road (B 21) along the river Saalach via Bad Reichenhall and Schneizlreuth over the border to Unken in Austria, and from there onwards through the Wendelberg tunnel to Lofer.

[118] Interviews (Bavarian Red Cross, Salzburg Red Cross)

[119] Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2018)

Cross-border healthcare services

EU legislation and case law of the Court of Justice of the European Union (CJEU) exert a considerable influence on the regulation of healthcare goods and services in EU Member States and have also a profound impact on future healthcare delivery[120]. This also applies to a provision of cross-border healthcare services, for which the specific legal framework is set by legal provisions that emanate from primary EU Treaty law[121] and the secondary EU legislation currently in force[122] (see: box 4-9).

Box 4-9 Main elements of the EU legal framework for cross-border healthcare[123]

The first element is Article 168 (2) of the Treaty on the Functioning of the European Union (TFEU), which states that (…) *the Union shall encourage cooperation between the Member States in the areas referred to in this Article and* (…) *in particular encourage cooperation between the Member States to improve the complementarity of their health services in cross-border areas.*

A second element are the Regulations 883/2004/EC and 987/2009/EC on a coordination of social security systems, which allow patients insured under these systems, subject to prior medical authorisation, to receive hospital treatment in another Member State, for which related cost is then charged to their social security system.

A third element is Directive 2011/24/EU on patients' rights in cross-border healthcare, which establishes a degree of patient mobility without prior authorisation for planned non-hospital treatments. Since its transposition into the legislation of every Member State on 25 October 2013, patients can obtain repayment for planned non-hospital (external and outpatient) treatment provided abroad without prior authorisation at the rates applicable in the country of affiliation after paying the costs in advance. Article 10 (2) and (3) of this Directive also creates a legal framework within which to organise structured cooperation between Member States at along EU-borders. Member States shall facilitate cooperation in cross-border healthcare provision at regional and local level as well as through ICT and other forms of cross-border cooperation. The Commission encourages Member States, particularly neighbouring countries, to conclude agreements among themselves and also encourages Member States to cooperate in cross-border healthcare provision in border regions.

This EU legislation is also applied by the **national legislations in Austria and Germany. that are governing the respective healthcare systems.** Both national systems do have many similarities and also marked differences, with the latter coming to the fore especially in the context of cross-border healthcare provision.

Austria and Germany apply a corporatist-style of health policy making that involves government actors at the federal and regional levels as well as a broad range of strongly organised health actors having a para-public status based on self-government. Healthcare organisation is on either side characterised by a high number of healthcare providers and free

[120] Busse / Blümel (2014), p.41

[121] Lisbon Treaty (Treaty on the Functioning of the European Union, TFEU), more particularly Title XIV "Public Health" and Article 168

[122] Regulation (EC) No 883/2004 of the European Parliament and of the Council of 29 April 2004 on the coordination of social security systems. Regulation (EC) No 987/2009 of the European Parliament and of the Council of 16 September 2009 laying down the procedure for implementing Regulation (EC) No 883/2004 on the coordination of social security systems. Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare.

[123] For a more extensive overview see: European Commission, DG REGIO (2017), pp.10, 16-34

access for patients to medical doctors. Both countries also have a social insurance model with universal coverage, social insurance financing, and public or private ownership of facilities for healthcare services provision[124]. Aside to diverging healthcare policy goals pursued in both countries, the most important differences exist in the area of financing of the hospital sector and in particular with regard to the structural set-up and functioning of health insurances (see: box 4-10). Practical implications of these differences on a cross-border provision of healthcare services were already in 2005 analysed for the border segment between Bavaria and Upper Austria[125].

Box 4-10 Main features of national healthcare systems in Germany and Austria[126]

The German healthcare system offers three mandatory health benefits: health insurance, accident insurance and long-term care insurance. Governance of this system is very complex and characterised by a sharing of decision-making powers between the Federal Government, the federal states (Länder) and legitimised civil society organisations (i.e. membership-based, self-regulated organisations of payers and providers), to which governments have traditionally delegated competences. The system is regulated by the "Federal Joint Committee" (Gemeinsamer Bundesausschuss), which is independent of the Ministry of Health and authorised to make binding regulations on aspects that emerge from health reform laws or routine decisions regarding healthcare in Germany.

Financing for the majority of hospitals is based on the dual principle. (1) The statutory health insurance finances the ongoing operating costs of hospitals within the prescribed hospital remuneration. Each hospital negotiates annually with public health insurance funds an annual budget for the remuneration of in-patient and semi-stationary hospital services. Through this, a certain amount of service is agreed for the following year in accordance with the provisioning mandate of a hospital specified by the respective federal state. (2) The federal states promote investments of hospitals (basic funding, flat-rate funding, etc.), as far as they are listed in a hospital plan. There is a legal entitlement to state support for investment, but there are major differences in the extent of support between the individual federal states.

Health insurance is compulsory for the whole population in Germany and consists of two separate systems: (1) Salaried workers and employees below a defined yearly income threshold (i.e. EUR 59,400 in 2018) are automatically enrolled into "statutory health insurance" (Gesetzliche Krankenversicherung), which is paid for with joint employer-employee contributions. Statutory health insurance currently consists of around non-profit 130 healthcare funds (Krankenkassen), which are "corporations under public law" (Körperschaften des öffentlichen Rechts) and cover around 89% of the population. (2) Persons with a yearly income above the defined threshold as well as students and civil servants for complementary coverage can opt for "private health insurance" (Private Krankenversicherung). This system consists of 42 larger private health insurers and around 30 other very small regional private health insurers that together cover about 11% of the population

A basic principle of the **Austrian healthcare system** is equal and easy access to all health services for all, regardless of age, place of residence, origin and social status, and regardless of the type or scope of benefits. Governance of the public healthcare system is complex, with responsibilities being essentially divided between the Federal Government, the federal states (Länder), the municipalities (Gemeinden) and social security as a self-governing body (Sozialversicherung). The federal level is responsible for general legislation and other supra-regional health system matters. The Länder define implementing legislation, ensure the provision of healthcare within hospitals (intramural care) on ground of a hospital plan and carry out health administration together with municipalities. Social security regulates among other things the supply of physicians together with the national chamber of

[124] Marmora / Wendt (2012), pp. 11-20

[125] Lüdecke / Allinger (2005)

[126] Busse / Blümel (2014); Hofmarcher / Quentin (2013); Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2018a)

physicians (Ärztekammer). The central body for the planning, control and financing of the health care system is the Federal Health Agency (Bundesgesundheitsagentur, BGA). In each Land, there is a "Regional Health Funds" (Landesgesundheitsfonds, LGF) as well as a "Land-level steering commission for objectives" (Landes-Zielsteuerungskommission), which implement healthcare policy principles elaborated by the BGA. Since 2013, a partnership- and contract-based targeting system (Bundes-Zielsteuerungsverträge) has been set up between the federal government, the federal states and social security for better coordinating the hospital sector and the outpatient care sector.

The financing of public healthcare is also regulated between the federal level, the Länder and the municipalities. (1) For the hospital sector, there are two main types of funding: (1a) Public general hospitals and public specialised hospitals as well as private non-profit general hospitals are publicly funded through the nine Regional Health Funds (LGF) of the Länder and according to the "Diagnosis-Related Group System" (leistungsorientierten Krankenanstaltenfinanzierung, LKF). The nine LGF are financed by funds coming from the federal level, the Länder, the municipalities and the social insurance. (1b) Private for-profit hospitals and other hospitals (e.g. sanatoriums, rehabilitation centers, facilities for the chronically ill) are financed by the "Private Hospitals Financing Fund" (Privatkrankenanstalten-Finanzierungsfonds, PRIKRAF), which is a "clearing unit" for services of private hospitals for which there is a compulsory health insurance contribution. (2) The outpatient care sector (i.e. registered physicians etc.) is predominantly financed through health insurance contributions and self-payments, most recently also through tax revenue.

There are two types of health insurances in Austria. (1) Statutory health insurance as a compulsory insurance, which guarantees the required medical treatments. Its most important element are the "Regional Health Insurances" (GKK - Gebietskrankenkassen). Each federal state has its own GKK, in which the majority of employed persons working in the private sector and their dependents are insured. With the decrease in the number of civil servants, more employees from the public sector are also insured with the GKKs under private law contracts. Statutory health insurance also includes a number of other health insurance funds that are focused on particular sectors or professions (e.g. railroad / mining, independent professions, peasants etc). (2) Private supplementary insurances are optional and can be concluded by every Austrian resident. They provide additional services that guarantees more comfort in the case of a hospital stay or cover additional costs for dental visits, cures and alternative medicine.

The above-mentioned **differences also influence the cross-border provision of healthcare services in the EuRegio, especially when it comes to practically apply the different procedures introduced by the relevant EU legislation.**

A first aspect is the automatic coverage of cost for a cross-border healthcare treatment on ground of Regulation 883/2004/EC. The procedure in place stipulates that a "partner health insurance" (Partnerkrankenkasse) in the patients' country of origin has to cover the full cost, which incurred for scope of services provided in accordance with the legislation of the country of treatment. This can create a risk for public health insurances in the patients' country of origin, as they have to bear potential additional cost that can emerge if high cost differentials are existing between the concerned countries[127].

This situation seems to exist in the Land of Salzburg, where public health policy is oriented towards a maximum supply of healthcare services to all residents that are planned, organised and also financed by the public regional health funds in Salzburg (Salzburger

[127] Allinger (2016)

Gesundheitsfonds, SAGES)[128]. In case of more costly treatments in Bavaria that can in principle be provided by hospitals in the Land of Salzburg, the EU cost charging regime therefore leads to an additional financial burden for the "Salzburg Region Health Insurance" (SGKK)[129].

A second aspect directly associated with this additional financial burden is that the SGKK delivers prior authorisations for planned cross-border treatments (E112) to Salzburg residents very restrictively. This applies not only to authorisations delivered on ground of Regulation 883/2004/EC, but also to authorisations that Austrian patients have to request for certain treatments in the context of Directive 2011/24/EU[130]. Moreover, the latter option also involves a much higher financial risk for patients from Salzburg, as treatment cost are higher on the Bavarian side and because the individually pre-financed cost is reimbursed to patients based on the average cost incurred in Austria and within the scope of services provided in accordance with Austrian legislation[131]. This lack of financial security for treatments of Austrian citizens in Bavaria was also critically viewed by healthcare professionals from the EuRegio, all the more because a coverage of cost for Bavarian patients is functioning well in the opposite direction[132].

This last remark also points to a **third aspect** that is a particular feature of cross-border healthcare service provision in the EuRegio. Already in the 1970s, various public health incurance companies in Bavaria[133] have concluded two agreements with the "Salzburg Land Hospitals" (Salzburger Landeskliniken, SALK) on a direct settlement of costs for outpatient hospital treatments and inpatient hospital treatments of Bavarian patients. This contractual arrangement exists until today and is unique at the entire German-Austrian border. Over the years, these agreements were only updated to reflect changing context conditions[134]. For the inverse constellation, however, similar agreements are not concluded between the SGKK and neighbouring hospitals on the Bavarian side of the EuRegio[135].

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[128] SAGES is one of the "regional health funds" with an own legal personality, which were established by the Austrian Länder as a result of subsequent health reforms (2005, 2008).

[129] Interview (AOK-Bavaria)

[130] The following treatments are subject to a prior authorisation: (1) inpatient treatment and examinations requiring at least one overnight stay; (2) outpatient treatment and examinations requiring the use of highly specialised and expensive medical infrastructure or equipment; (3) treatments involving a particular risk to patients or the general public; (4) treatments provided by healthcare providers that could give rise to serious and specific safety or quality concerns on a case-by-case basis (except: healthcare services provided under Union law for ensuring a minimum level of security and quality throughout the Union). See on this: Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2018b)

[131] Allinger (2016); Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2018b)

[132] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017a)

[133] The current signatories of these agreements are the "AOK-Bayern" and the "Association of Complementary Health Insurances" (Verband der Ersatzkassen e.V., vdek), with the latter representing the following public health insurance companies: BARMER GEK, Techniker Krankenkasse (TK), DAK Gesundheit, Kaufmännische Krankenkasse (KKH), Hanseatische Krankenkasse (HEK), Handelskrankenkasse (hhk). Evidence from discussions at the „CPS Stakeholder Workshop". On public health insurances see also section 4.3.3 below.

[134] Evidence from discussions at the „CPS Stakeholder Workshop"

[135] Interview (AOK-Bavaria)

Cross-border emergency medical services

Different to healthcare services, emergency medical services are only to some extent affected by EU legislation. The latter considers these services mostly in relation to single market rules on public procurement for service provision (secondary EU legislation) or in the event of failure to comply with these rules (CJEU case law)[136]. The only piece of EU legislation with a direct cross-border relevance is the Council Decision 91/396/EEC on the introduction of a single "112" emergency call number[137], which aims to prevent problems in contacting the responsible services for citizens facing emergency situations in other Member States. Further to this, the European Committee on Standardisation (CEN) has also defined several EU-wide standards for ambulances / medical transportation vehicles (EN 1789)[138] and patient handling equipment used in road ambulances (EN 1865)[139].

As a consequence, **the broad variety of topics relating to emergency medical services**[140] **is primarily regulated by national and/or regional legislations** that vary greatly among EU Member States[141]. In Austria and Germany, the respective federal states (Bundesländer) are legally responsible for a provision of emergency services ("Rettungsdienst" or just "Rettung"), which cover services of public pre-hospital emergency healthcare and also ambulance services.

However, marked differences exist between both countries and also between the individual Länder of each country as regards a delegation of tasks to lower administrative levels and the actual organisation / operation / provision of services as well as their financing (see: box 4-11). These differences are also found in the EuRegio and strongly affect the day-to-day provision of cross-border emergency medical service.

Box 4-11 Key features of a provision of emergency medical services in Austria and Germany[142]

In Austria, the individual federal states (Bundesländer) are legally responsible for the provision of emergency services (Rettung) and have adopted Land-specific rescue service laws (Landesrettungsgesetze), which regulate relevant topics such as the organisation and the scope of services or the operational tasks and the financing of service provision. The Austrian Länder have delegated their responsibilities for emergency services to the local level (municipalities and cities), which must ensure the provision of general emergency services within their administrative boundaries. Apart from the city of Vienna that operates its own emergency medical service (Wiener Berufsrettung),

[136] Worseling (2017)

[137] Council Decision 91/396/EEC of 29 July 1991 on the introduction of a single European emergency call number.

[138] These standards aim at gradually changing the diversity of the currently used ambulances in order to reach a single set of sufficiently common and interchangeable features for design and equipment.

[139] These standards set minimum requirements for the design and performance of stretchers and other patient handling equipment used in road ambulances to ensure patient safety and minimise the physical effort required by staff operating the equipment.

[140] e.g. organisational structures and coordination mechanisms, standards of care and equipment, requirements for qualification and training, free access to in-hospital care, financing mechanisms, links with national crisis management systems etc.

[141] For a comprehensive EU-wide overview, see: WHO (2008).

[142] Lüdecke / Allinger (2005); Wikipedia (2018h); Wikipedia (2018i); Interviews (Bavarian Red Cross, Salzburg Red Cross)

Austrian municipalities and cities usually do not carry out the emergency service themselves. They commission existing and "recognised" rescue service organisations, which they entrust with the operational provision of emergency services. The Austrian Red Cross (ÖRK) is the most important non profit organisation providing rescue services in Austria. In addition, also other non profit rescue organisations (e.g. Arbeiter-Samariter-Bund Österreich, Malteser Hospitaldienst Österreich, Johanniter-Unfall-Hilfe) and even smaller associations or commercial services (Green Cross or the Austrian Rescue Service ÖRD) may have contracts with municipalities to perform the rescue service. In Austria, the cost of gound-based emergency services are only to a certain extent covered by the contributions of Austrian public health insurances, which makes that the ÖRK, as the country's lagest service provider, has to mobilise additional funding from donations.

In Germany, the individual federal states (Länder) are legally responsible for emergency services (Rettungsdienst) that cover ground or air-based emergency medical care and medically accompanied patient transport as well as patient transport. Land-level emergency service laws (Rettungsdienstgesetze) regulate a wide range of topics such as the organisation of emergency services and their actual scope, the operational tasks and their allocation to different task-bearers, quality standards and training requirements as well as the financing of emergency services and specific modalities for service user fees. The Land-level laws typically delegate responsibilities for emergency services to the county level ("Kreis" or "kreisfreie Stadt"). The latter may provide emergency medical services themselves, or contract them out to a number of other service providers such as different types of civil non-profit organisations or private companies. The financing of emergency service provision is regulated very differently across the Länder, depending on the chosen service implementation approach.

- In case of a public law based implementation approach, the counties or municipalities are the task-bearers of emergency services ("municipal compulsory task"). Throughout Germany, three different models are used for a public law based implementation: (1) The emergency medical service is directly financed by the public task-bearer and also carried out directly with its own staff. (2) The "tendering model" is a form of public-private partnership, in which the actual delivery of the emergency service is carried out by a service providing organisation that is remunerated directly by the public task-bearer. (3) The "service concession model" is also a form of public-private partnership, in which the service providing organisation settles directly the cost for emergency services with the (public) health insurance funds.
- Also a private law based implementation approach is possible in Germany. In this case, the public task-bearer of emergency services is responsible for the supervision of the service providing organisation. The latter then settles the cost for service provision directly with the (public) health insurance funds.

In the Land of Salzburg, the provision of emergency services is governed by the most recent version of the law of July 1981 on "local relief and rescue services" (Salzburger Rettungsgesetz)[143]. The task of the municipalities and cities is to ensure the provision of general emergency services within their administrative boundaries, but services are actually delivered by "recognised rescue organisations" (anerkannte Rettungsorganisationen). These are within the entire Land of Salzburg the regional association of the Austrian Red Cross (ÖRK Landesverband Salzburg) and also the regional organisation of the Austrian mountain rescue service. Within their respective area of recognition, both organisations are obliged to conclude a contract for the provision of general relief and rescue services with each municipality (i.e. upon their invitation).

[143] RIS - Rechtsinformationssystem des Bundes (2018)

In Bavaria, the law on emergency services of July 2008 (Bayerisches Rettungsdienstgesetz, BayRDG)[144] delegates the task of providing emergency services to the county level ("Kreis" or "kreisfreie Stadt") and foresees to this end that counties cooperate in the context of public law based "special purpose associations for rescue service and fire brigade alert" (Zweckverbände für Rettungsdienst und Feuerwehralarmierung, ZRF). A service concession model is applied in Bavaria for the actual delivery of ground-based and airborne emergency rescue services, which usually involves the conclusion of a public-law contract between the concerned ZRF and a suitable service provider (i.e. voluntary aid organisations or private companies).

If both Land-level laws are compared, it becomes clear that the degree of regulation of matters relating to emergency services is clearly higher in the Bavarian law than in the law of the Land Salzburg. Moreover, the Bavarian law also contains explicit rules on the provision of cross-border emergency services (Article 8; Article 39 (2) and (5); Article 53 (1)) that are not existing in the Salzburg Land-law. Especially Article 8 encourages the ZRF established by Bavarian counties to use possibilities for planning and supplying emergency services beyond national or state borders.

In order to overcome differences between national systems for emergency medical services, neighbouring countries can conclude **bilateral interstate agreements** that may frequently also establish a legal framework for the provision of cross-border emergency medical services. The Federal Republic of Germany and the Republic of Austria have concluded in 1988 a bilateral interstate agreement on mutual assistance in the event of disasters or serious accidents that entered into force in 1992[145]. The agreement lays down framework conditions for voluntary assistance through staff and material that is provided by one country ("sending State") at the request of the other country ("State of operation")[146]. However, this agreement states explicitly that it does not affect the traditional mutual emergency aid that is quickly provided in border-close regions and municipalities without long decision-making procedures in the sense of good neighbourly relations (Article 1 (1)).

This non-coverage of day-to-day cross-border emergency aid creates unsatisfactory legal framework conditions along the entire Austrian-German border that also adversely affect service provision within the EuRegio (see: section 5.2.3). The overall situation at the German-Austrian border is also in stark contrast with the much more elaborated legal framework on cross-border cooperation between emergency services that both countries have established with the Czech Republic through recent bilateral interstate agreements (i.e. Germany-Czech Republic in 2013; Austria-Czech Republic in 2016) and regional implementing agreements.

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[144] Bayerische Staatskanzlei (2018b)

[145] Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (2018)

[146] The interstate agreement regulates a wide range of operations-related matters (Articles 5-12), including telecommunication and in particular radio communication (Article 14). It also provides for further cooperation between the competent Federal authorities as well as between relevant lower level authorities on ground of the applicable national law (Article 13).

4.3.3 The production base for a provision of CPS

Cross-border healthcare and medical emergency care services in the EuRegio are provided by using **already existing "soft" infrastructure with a public supply function** that is located on either side of the common border. This includes fixed physical assets such as hospitals and dispatch centres that all have highly specialised technical equipment, but also mobile physical assets in form of specialised vehicle fleets with their own medical and communication devices (e.g. different types of ambulance cars, rescue helicopters etc.). Soft infrastructures also include a wide range of other non-physical assets (e.g. body of rules and regulations governing public health policy and the related financing system, including health insurances of different kinds) and of course the specialised staff that operates all physical and non-physical infrastructure assets on a day-to-day basis.

The legal status of the involved organisations and also the forms of ownership regarding these infrastructures (esp. fixed and mobile physical assets) **is highly diverse** on both sides of the border. Ownership ranges from direct or indirect public ownership to various forms of private ownership (i.e. by profit-making organisations, by associative/non-profit making organisations).

To illustrate this diversity for the EuRegio, short profiles of organisations involved in a provision of cross-border healthcare and emergency medical care services are presented below (see: box 4-12).

Key actors are the public and/or private hospitals existing on the Bavarian and Austrian side[147], the two rescue coordination centres in Traunstein and Salzburg[148], the main public health insurance funds operating in the EuRegio on the Bavarian and Austrian side[149] as well as the Bavarian and Salzburg Red Cross regional associations[150]. These organisations must always work together closely and without friction on a cross-border basis, which clearly illustrates the high degree of complexity that is associated with a delivery of CPS in the fields of healthcare and emergency medical care.

Box 4-12 Key actors involved in cross-border healthcare and emergency medical care

On the Bavarian side of the EuRegio, the **"Clinics Southeast Bavaria" (Kliniken Südostbayern AG)** emerged in 2009 from a merger of hospitals in the two counties of Berchtesgadener Land and Traunstein and has become the most powerful healthcare service provider in Southeast Bavaria. "Kliniken Südostbayern" is a joint municipal non-profit holding corporation, of which the two counties Traunstein and Berchtesgadener Land are the sole shareholders. The legal seat of the corporation is Traunstein and it is operating six hospitals at different locations in both counties (Bad Reichenhall, Berchtesgaden, Freilassing, Ruhpolding, Traunstein and Trostberg). With a capacity of almost 1,300 beds, Kliniken Südostbayern delivers care services to more than 160,000 inpatients and outpatients

[147] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017a); Bayerische Gemeindezeitung (2017); Landkreis Traunstein (2018); Wikipedia (2018c); Gemeinnützige Salzburger Landeskliniken Betriebsgesellschaft (2018); Land Salzburg (2018b)

[148] Integrierte Leitstelle Traunstein (2018); Österrechisches Rotes Kreuz Salzburg (2018)

[149] SalzburgWIKI (2018c); Wikipedia (2018a); Wikipedia (2018b)

[150] Österrechisches Rotes Kreuz Salzburg (2018); Bayerisches Rotes Kreuz (2018); Wikipedia (2018d);

each year. In addition, there are also a number of **other general hospitals, specialist clinics and rehabilitation clinics** (e.g. Bad Reichenhall / Bayerisch Gmain, Klinik Hochstaufen) in both counties, which are operated either publicly or privately.

In the Land of Salzburg, a large number of general public and also private hospitals as well as specialised rehabilitation centres do exist. Many of them are located in city of Salzburg (10), but also in the Salzburg districts of Flachgau (3), Pinzgau (4), Pongau (9) and Tennengau (7). The **"Salzburg Land Hospitals" (Salzburger Landeskliniken, SALK)** are the largest health service provider in the Land of Salzburg. SALK consists of the university hospital of the Paracelsus Medical Private University in the central area (Landeskrankenhaus Salzburg and Christian-Doppler-Klinik), the associated Land hospitals in St. Veit, Hallein and Tamsweg, the university institute for preventive and rehabilitative sports medicine and the children's neuro-rehabilitation centre "reKiZ". In 2004, the SALK got its own legal structure as a non-profit making umbrella organisation (Gemeinnützige Salzburger Landeskliniken Betriebsgesellschaft mbH). The sole shareholder is the Land of Salzburg. In 2003, the Paracelsus Medical Private University began teaching activities and SALK became its partner for clinical training and research.

The "Integrated dispatch centre Traunstein" (Integrierte Leitstelle Traunstein, ILS Traunstein) is the operations centre for non-police related defence against hazards in the counties of Altötting, Berchtesgadener Land, Mühldorf/Inn and Traunstein. The operator of the dispatch centre is the public-law based **"Special purpose association for rescue service and fire brigade alert" in Traunstein (Zweckverband für Rettungsdienst und Feuerwehralarmierung Traunstein, ZRF Traunstein),** which was established by the above-mentioned counties. In addition to its tasks in areas such as fire-fighting and civil protection, the ILS Traunstein is responsible for alerting and operational control of emergency medical services (i.e. deployment of ambulance vehicles, rescue helicopter "Christoph 14", vehicles of mountain and water rescue). It also manages the public transportation of patients who do not need emergency medical care (i.e. by ambulances, usually traveling from the home of patients to the hospital for outpatient examinations and other treatments or inter-hospital transfers). For this, the ILS Traunstein accepts transport orders and organises the deployment of ambulances of public service organisations). In addition, the ILS also maintains a "negative hospital bed checklist" for the purpose of avoiding unnecessary patient transfers and for guiding transfers to the nearest suitable hospital.

The **"Land-level dispatch centre Salzburg" (Landesleitstelle Salzburg)** is operated by the Austrian Red Cross (ÖRK) and established at two locations (the city of Salzburg, Zell am See). The dispatch centre not only alerts the rescue and ambulance services of the Red Cross regional association Salzburg, but also coordinates the emergency medical helicopter service in the Land. The tasks of the dispatch centre also include the alerting of other specific emergency organisations such as mountain rescue, cave rescue, water rescue and civil protection units. In addition, the dispatch centre also alerts the fire brigade and police during incoming emergency calls. Finally, the dispatch centre also schedules patient transport by ÖRK-ambulance vehicles that can be requested at the centre.

The **Salzburg Region Health Insurance (Salzburger Gebietskrankenkasse, SGKK)** is by far the most important health insurer in the Land of Salzburg. In 2013, over 443,000 people were insured with SGKK and it has around 5,000 affiliated contractors (i.e. doctors, hospitals, pharmacies, physiotherapists, etc.).

The **"Local Health Insurance Bavaria" (Allgemeine Ortskrankenkasse Bayern, AOK Bayern)** is part of the German statutory health insurance funds from the group of general local health insurances Based in Munich, it is with around 4.5 million insured persons Bavaria's largest health insurance funds and the fourth largest in Germany. The **"Barmer Ersatzkasse" (BARMER)** is also part of the German statutory health insurance funds from the group of complementary health insurance. It is a public corporation with self-government that offers insurance services in the fields of health insurance and long-term care insurance. With around 9.4 million insured persons, BARMER is the second largest health insurance funds in Germany. In addition to these large statutory health insurances, there are **a number of other statutory health insurers in Bavaria from the group of complementary health insurance** (e.g. Techniker Krankenkasse TK, Kaufmännische Krankenkasse KKH, Hanseatische Krankenkasse HEK, Handelskrankenkasse hhk) **and also private health insurers.**

The **"Bavarian Red Cross" (Bayerisches Rotes Kreuz, BRK)** is a regional association of the German Red Cross (DRK). In contrast to all other Red Cross regional associations in Germany that are organised as private-law based registered associations (eingetragener Verein), the BRK is a public law

based body (Körperschaft des öffentlichen Rechts) for which the competent supervisory authority is the Bavarian Ministry of the Interior. The BRK offers a variety of social services, including patient services and medical emergency or ambulance services, as well as other specialised rescue services (i.e. water and mountain rescue). In the EuRegio, the BRK is active with two county-level associations (Kreisverbände). The BRK county-level association Traunstein operates 7 rescue stations that dispose of a total of 23 emergency vehicles. The BRK county-level association Berchtesgadener Land operates 4 rescue stations that dispose of a total of 15 emergency vehicles.

The **"Red Cross Salzburg" (Rotes Kreuz Salzburg)** is one of the nine regional associations of the Austrian Red Cross (ÖRK). The regional association is a private, democratically organised charity organisation that is not profit-oriented. The tasks of the Red Cross Salzburg include (among many other social services) the provision of medical emergency, ambulance rescue and ambulance-based patient transportation services as well as disaster relief services. In 2011, the Red Cross Salzburg comprised 3,500 volunteers and 800 full-time employees as well as 300 civil service workers.

Cross-border healthcare services

A provision of cross-border healthcare services in the EuRegio is strongly determined by the scope and quality of ambulatory and stationary treatment options that general hospitals and specialised clinics are offering on either side of the border.

The Land Salzburg has among all Austrian Länder one of the highest numbers of actual beds per 100,000 inhabitants in hospitals that are financed by the Land-level Health Funds (Landesgesundheitsfonds)[151]. Especially hospitals in the city of Salzburg have for a long time offered a much wider range of specialised / highly specialised healthcare services than the county-level hosptials on the Bavarian side. This has also induced patient flows from Bavaria to Salzburg that were clearly stronger than flows in the opposite direction.

On the Bavarian side, however, a strong healthcare service provider has emerged with the 2009 merger of hospitals in the counties of Berchtesgadener Land and Traunstein into "Kliniken Südostbayern AG". This merger represented a clear strategic positioning with respect to the hospitals in Salzburg and has in recent years also reduced differences in the service offer. Apart from a few areas (e.g. cardiac surgery), "Kliniken Südostbayern" now covers the entire range of medical care and the clinic in Bad Reichenhall also offers innovative treatments in the field of bronchoscopy (endoscopic examination / treatment of the respiratory tract) or minimally invasive, robot-controlled interventions in the abdominal area[152]. The hospitals now ensure a 2nd level of care[153] and fulfill, in accordance with Article 4(2) of the Bavarian law on hospitals (Bayerisches Krankenhausgesetz, BayKrG), supraregional tasks in diagnosis and therapy[154].

[151] Fuchs / Hubik / Riedl / Slezak (2013)

[152] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017a)

[153] Evidence from discussions at the „CPS Stakeholder Workshop"

[154] Hospitals of the 1st level of care ensure basic care, while hospitals at the 3rd level provide a comprehensive and differentiated range of services with corresponding medical-technical facilities. See on this: Bayerische Staatskanzlei (2018)

Over the years, also **close inter-hospital cooperation** has developed between both sides. This concerns not only highly specialised healthcare services (e.g. ophthalmology, oral and maxillofacial surgery), but also training and the exchange of young doctors. One example is the long-standing and successful cooperation between the University Clinic for Cardiac Surgery in Salzburg (part of SALK) and the cardiology departments at the Traunstein Hospital and the county-level hospitals Altötting-Burghausen, but also its cooperation with specialised physicians for internal medicine in Traunstein. Another example is the Paracelsus Medical Private University (PMU) in Salzburg, for which several clinics in the Bavarian part of the EuRegio are acting as "teaching hospitals" (i.e. county hospital Bad Reichenhall, hospital Traunstein, Schön clinic Berchtesgadener Land)[155].

Cross-border emergency medical services

Fixed and mobile physical assets with adequate technical equipment and also seamless cooperation / communication among all actors of the rescue chain are basic prerequisites for a provision of cross-border emergency medical care services.

Within the EuRegio, **the "Integrated dispatch centre Traunstein" and the "Land-level dispatch centre Salzburg"** are well interconnected. Smooth cross-border communication is ensured because the centre in Traunstein was equipped with an Austrian digital radio that connects it to the centre in Salzburg. Notification of an emergency patient from Bavaria takes place via the dispatch centre Traunstein, while the Salzburg dispatch centre clarifies issues on the conditions or the exact arrival time directly with the crew of an emergency vehicle. This has become possible because three emergency ambulance vehicles in the county Berchtesgadener Land were equipped with radio devices enabling mutual communication[156].

Nevertheless, some hurdles for cross-border communication are still existing within the EuRegio. Already mid-2016 the Bavarian Red Cross (BRK) has switched to digital radio and also the Land of Salzburg has since March 2018 a coherent and territory-wide digital radio network that is used by all blue light organisations (i.e. Red Cross, police, firefighting services). Despite this, however, direct cross-border communication between emergency medical vehicles from Salzburg and Bavaria is still not possible. The reason for this is that the radio network of German authorities uses a different encryption than the network on the Austrian side. A common encryption would be immediately feasible from a technical point of view, but German authorities are currently preventing an opening of the German code for Austrian rescue organisations and also the Austrian Ministry of the Interior is reluctant to authorise a cross-border use of radio. The current situation is indeed unsatisfactory, but

[155] EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017a) ; Bayerische Gemeindezeitung (2017) ; https://de.wikipedia.org/wiki/Kliniken_S%C3%BCdostbayern ; https://www.salk.at/490.html ; Resch, H. (2016)

[156] Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2013); infomediaworx.wordpress (2017)

practitioners consider that direct vehicle-to-vehicle communication is usually not necessary since everything is regulated by the two dispatch centres in Traunstein and Salzburg[157].

Emergency vehicles of different types and sizes are used on the Bavarian and Salzburg sides of the EuRegio. The most commonly used vehicles generally conform to aspects of the European standards EN 1789 and EN 1865[158], which ensure that emergency medical service personnel from one side is able to quickly adapt to a vehicle from the other side. Nevertheless, practitioners from the EuRegio observe that a **further cross-border synchronisation of equipment** in emergency vehicles is still necessary[159]. Moreover, **strong capacity differences exist** especially in the zones close to the border. While a total of 40 ambulances and emergency physician response vehicles are operating in the area around the city of Salzburg, there are only 6 emergency ambulances and 4 patient transport ambulances as well as 3 emergency physician response vehicles operating in neighbouring county of Berchtesgadener Land[160].

Cooperation is functioning very well between emergency medical rescue teams from either side of the border **and the respective hospitals in Bavaria or Salzburg that are receiving emergency patients**[161]. This is crucial because the medical emergency services of the Salzburg hospitals are still important for the neighbouring Bavarian counties and even indispensable in the area around the city of Freilassing. However, also the "Kliniken Südostbayern" are developing new capacities for a treatment of patients in acute crisis situations (acute care) that can be relevant for emergencies ocurring on the Salzburg side[162].

Smooth cooperation is also the result of regular joint exercises and information exchanges among practitioners from both sides of the border. A good example for the latter is the "interface talk" organised in 2013 at the Red Cross House in Freilassing. Senior medical staff from various hospitals in the city of Salzburg presented the existing emergency treatment options to Bavarian emergency physicians and emergency paramedics as well as to representatives from both dispatch centres. Also related organisational matters were explained and an information sheet was jointly elaborated, in which important issues such as admission criteria, priorities of the clinics and telephone numbers of doctors on duty can be

[157] infomediaworx.wordpress (2017)

[158] (1) Patient Transport Ambulance (Krankentransportwagen KTW): van-type road ambulance designed and equipped for the transport of patients who are not expected to become emergency patients, which conforms to EN 1789 types A1/A2 (single/multiple patient). Mobile Intensive Care Unit (Rettungswagen, RTW): larger van-type road ambulance designed and equipped for the transport, advanced treatment and monitoring of patients van used for emergencies, which corresponds to EN 1789 type C. (3) Emergency physician response vehicle (Notarzteinsatzfahrzeug, NEF): a small van or SUV with the purpose of bringing an emergency physician to the scene of the emergency, which conforms in Germany to DIN 75079 and in Austria to EN 1789 and EN 1865.

[159] Evidence from discussions at the „CPS Stakeholder Workshop"

[160] Interviews (Bavarian Red Cross, Salzburg Red Cross)

[161] Evidence from discussions at the „CPS Stakeholder Workshop"

[162] Evidence from discussions at the „CPS Stakeholder Workshop"

quickly accessed. This sheet now helps emergency physicians and coordinators of emergency operations in taking their decisions[163].

4.3.4 CPS tasks and intervention approaches to address cross-border needs

The existing CPS on healthcare and medical emergency care have above all **an auxiliary basic supply task for people living in the EuRegio.** These CPS complement services already available in the domestic context and thereby ensure that sick or injured persons can access a wider range of affordable and also high quality services in all parts of the cross-border area.

The CPS in both fields address cross-border needs typically through **an effectiveness-improving intervention approach, which generates benefits for the entire cross-border area.** This improvement is achieved in two different ways. (1) Already existing domestic healthcare services are extended across the common border, which gives patients from both sides access to healthcare services in hospitals on the respective other side of the border. (2) Already existing medical emergency services on both sides the border are better coordinated and integrated through close cooperation. This allows that injured persons on one side of the border can be directly helped by a medical emergency team from the other side, which comes to the site of emergency with its own rescue vehicles.

This said, we now explore at what degree cross-border healthcare and medical emergency services are actually demanded within the EuRegio.

Cross-border healthcare services

An important general factor that strongly determines cross-border patient flows is the procedure patients choose for taking up a planned treatment on the other side of the border (i.e. not emergencies). Practitioners consider the procedure of Directive 2011/24/EU less advantageous for patients than the procedure of Regulation 883/2004/EC, as in case of the latter they do not have to pay cost for treatments in advance[164]. A more specific factor that has historically influenced on cross-border patient flows within the EuRegio is the different scope of healthcare services provided on either side of the border (see:section 4.3.3).

Presenting exact figures for cross-border patient flows within the EuRegio is difficult. This is due to the fact the concrete data on treatments is especially on the Bavarian side captured separately by various public (and private) health insurances, but also because data on treatments is generally subject to confidentiality / privacy rules. Nevertheless, Bavaria's largest public health insurance funds (AOK-Bayern) estimates that around 1,000 of its insurance holders are crossing the border each year for following a planned treatment on the Austrian side[165]. But also the Bavarian section of the German association of complementary

[163] Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2013)

[164] Interview (AOK-Bavaria)

[165] Interview (AOK-Bavaria)

public health insurances (Verband der Ersatzkassen e.V.) confirms substantial cross-border patient flows from Bavaria to Salzburg that are even increasing[166]. Patient flows from the Salzburg side to Bavaria are assumed to be extremely low[167], which is mainly due to the fact that authorisations for planned treatments are delivered very restrictively by the Salzburg Region Health Insurance SGKK.

A specific factor stimulating patient flows from the Bavarian to the Salzburg side is also the existence of local branch offices that several German public health insurance funds have installed in the counties of Berchtesgadener Land and Traunstein (e.g. AOK Bayern, BARMER). Unlike centralised service centres for patients that are operated by some public health insurance funds, these local branch offices are usually staffed with competent personnel who knows from day-to-day practical experience all proceedings and rules that patients have to undertake / observe in case of a cross-border treatment[168].

All this suggests that **an imbalanced cross-border use of healthcare services exists within the EuRegio,** as Bavarian citizens can currently better access healthcare services in Salzburg than citizens of the Land of Salzburg in Bavaria. In the view of Bavaria's largest public health insurance funds, this situation should evolve towards a more balanced practice that is easy to understand and use for patients from both sides of the border and also reliable in terms of quality[169].

Cross-border emergency medical services

Cross-border rescue operations are in general only requested by a dispatch centre on either side of the border if domestic emergency services are not sufficient for coping with the size of an emergency or cannot reach quickly enough the scene of an accident.

Nevertheless, practice in the EuRegio shows that the integrated dispatch centre Traunstein makes more requests for medical emergency aid from Salzburg in Bavaria than vice versa[170]. Ambulances from Salzburg drive about five times a month to a cross-border emergency mission in the county of Berchtesgadener Land[171].

One factor explaining this "imbalance" is the higher number of ambulances that are available on the Salzburg side. Especially in the central-southern part of the EuRegio it is easier to request an ambulance from Salzburg for an acute emergency on the Bavarian side, whereas for an emergency on the Salzburg side it is not effective to request one of the few vehicles from the district of Berchtesgadener Land.

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[166] Evidence from discussions at the „CPS Stakeholder Workshop"

[167] Interview (AOK-Bavaria)

[168] Interview (AOK-Bavaria)

[169] See on this in general: AOK Bayern (2014)

[170] Evidence from discussions at the „CPS Stakeholder Workshop"

[171] infomediaworx.wordpress (2017)

Other influencing factors are the different regional systems for financing domestic emergency medical services and for covering cost linked to cross-border emergency interventions in Bavaria or Salzburg (see: section 4.3.5), but also the fact that cost for Austrian emergency medical services are generally lower than cost for German services.

4.3.5 Organisational structures and processes for delivering CPS

When looking at the current organisational structures and processes for delivering the analysed CPS, it becomes clear that they are set up either in form of a “centralised model” (cross-border healthcare services) or a “networking model” (cross-border emergency medical services). Under none of the CPS, however, the acual delivery of tasks was allocated to a specifically established cooperation structure or a joint cross-border body.

Cross-border healthcare services

A cross-border provision of healthcare services in the EuRegio follows a **centralised model.** This means in practice that existing healthcare services on either side of the border are extended to the respective other side, which meets the basic intentions pursued by current EU legislation in this policy field. However, this model also implies that the day-to-day organisation and management of healthcare services as well as the short to medium-term planning of their scope and quality continue to be in the sole responsibility of the competent organisms on each side of the border.

In particular with regard to the latter aspect, however, it can be observed that **a provision of clinical health services follows very different "political" logics on either side of the border.** While on the Salzburg side a provision of health services adopts a maximum care approach[172], the provision on the Bavarian side is much more oriented towards a profitability-oriented approach. In the latter case, mostly revenue generating healthcare services or treatments are maintained or newly set-up, whereas unprofitable services are more likely to be rolled back or even stopped[173].

Although the “shared service center model” implies that individuals decide themselves where to go for a planned medical treatment, it can be seen in the EuRegio that **the patients’ freedom of decision is strongly influenced by differences between the respectively established public health insurance systems.** On the Austrian side, the “Salzburg Regional Health Insurance Funds” (SGKK) holds a monopolistic position and delivers pre-authorisations restrictively to Salzburg citizens, in order to minimise double cost that are resulting from health treatments in Bavaria. On the Bavarian side, however, a larger number of public health insurance funds are operating that are also competing for insurance holders.

[172] Defined by statistical characteristics of hospitals: basically 900 and more beds and a comprehensive supply structure that includes, in addition to departments of internal medicine, surgery and gynecology / obstetrics, at least four other "full departments" having each a pre-defined minimum number of beds.

[173] Evidence from discussions at the „CPS Stakeholder Workshop“

This competition-oriented system supports a stronger customer-orientation of insurance funds[174] and acts thereby as a “door-opener” for cross-border treatments[175].

Cross-border emergency medical services

Cross-border emergency medical services in the EuRegio are organised and delivered according to a **networking model**, for which neither an informal nor a formal joint structure was newly created. However, **the two dispatch centres in Traunstein and Salzburg are acting** through their close and well-structured daily cooperation **as joint coordination unit** for this network-based model on cross-border public service provision.

Emergency medical services in Bavaria and Salzburg are organised, managed and delivered by the respectively competent regional- or local-level organisations on either side of the border, which have different legal statuses and material capacities (see: sections 4.3.2 and 4.3.3). Also the respective systems for financing the domestic provision of emergency medical services are fundamentally different, which complicates the settling of cost linked to cross-border emergency interventions within this networking model.

As the Salzburg section of the Austrian Red Cross (ÖRK Salzburg) only receives a lump-sum from the Salzburg Region Health Insurance (SGKK) for financing ground-based domestic emergency medical services, it must cover itself the cost for cross-border rescue interventions from Bavaria. In the meantime, however, the ÖRK Salzburg can settle at least part of this costs with the Land of Salzburg[176]. There also seems to be an informal "cost compensation arrangement" between the Red Cross organisations of both sides, through which ground-based emergency operations realised by both organisations within one year are offset against each other[177]. The situation is more difficult in case of air-based emergency medical rescue, because there still is no regulation on cost for certain types of missions of a Bavarian cross-border rescue helicopter that are not paid by Austrian health insurances[178]. If an air-based emergency rescue is taking place in these cases, then the respective ÖRK Land-level associations have to cover themselves the cost for a cross-border intervention from Bavaria.

On the Bavarian side, however, cost-coverage for cross-border rescue interventions coming from Salzburg has been completely clarified and billing to Bavarian public health funds works without complications[179].

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[174] If a public insurance company would be restrictive on the coverage of cost for a cross-border treatment, an insured persons quite easily change to another public insurance company that is offering such coverage.

[175] Interview (AOK-Bavaria)

[176] Interviews (Bavarian Red Cross, Salzburg Red Cross)

[177] Interview (AOK-Bavaria)

[178] This non-coverage of cost applies to the following categories of the NACA scoring system on the severity of medical emergencies: NACA I (Minor disturbance), NACA II (Slight to moderate disturbance), NACA III (Moderate to severe but not life-threatening disorder) and NACA VII (Death).

[179] Interviews (Bavarian Red Cross, Salzburg Red Cross)

One aspect that until very recently had a negative financial effect on the ongoing provision of domestic and cross-border emergency medical care within the EuRegio was the toll vehicles of accredited “blue-light” volunteer organisations were obliged to pay on Austrian expressways and motorways (vignette). Toll payment for the emergency vehicle fleets operated by volunteer organisations in the Land of Salzburg (i.e. Austrian Red Cross, water rescue, mountain rescue, cave rescue) and by the Bavarian Red Cross (BRK) created significant cost. In case of the BRK, this was also due to the fact that its ambulance vehicles often use motorways in the Land of Salzburg for transferring patients to hospitals in the city of Salzburg (without blue light) and for providing more quickly emergency medical care within the Bavarian counties. In case of cross-border medical emergency operations, BRK-vehicles could indeed attend the site of emergency rescue in Austria by motorways with blue lights / siren and without a vignette, but on the way of return they often had to spend a lot of time searching alternative rural roads and secondary roads to avoid toll payment. This high frequency of border-crossing circulation also created since 2017 repeatedly problems with fines for BRK-vehicles requested for interventions, if they were not equipped with a vignette or an electronic device for toll payment[180]. Due to the growing criticism from all sides concerned, the Austrian government decided in early 2018 to change the existing toll regulations and to allow emergency vehicles of non-profit organisations having a blue light authorisation to drive on expressways and motorways for free[181].

Despite these differences and difficulties, **the operational processes of cross-border service delivery have become increasingly well-coordinated and also better integrated,** even though a full harmonisation is not yet reached (i.e. communication systems). All relevant actors from both sides work together smoothly within this cross-border network model and are also further improving the quality of their collaboration (e.g. joint trainings, exchange of information and practical experiences etc.). This joint effort has led to a more effective provision of emergency medical services within the EuRegio that would not exist without the intense cooperation among the involved organisations.

4.3.6 Conclusions, elements of good practice and outlook

Cross-border health care takes place within the EuRegio already since the 1970s, thus long before Austria's full EU membership. The early patient flows from Bavaria to Salzburg were motivated by the broader scope of healthcare services supplied on the Austrian side. These flows have expanded during the following decades, as supply differences are partly existing until today. However, patient flows in the opposite direction were and still are marginal. This “one-way-road” is in parts caused by the more comprehensive health service offer on the

[180] Before 2017, toll infractions were often handled "more flexibly" during person-to-person controls. Since 2017, however, problems increased because toll capturing was automated through the installation of electronic overhead control devices.

[181] Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2018); Salzburg24 (2018)

Salzburg side, but it results also from marked differences between national / regional healthcare systems that are a key feature of the current “shared service center model”.

An effective provision of cross-border emergency medical services requires close cooperation among a variety of different actors on either side of the border. For this to achieve within the EuRegio, the CPS is organised and delivered according to a network model. Collaboration functions smoothly and effectively since many years and has generated very positive outcomes at the operational level. Nevertheless, the day-to-day provision of this CPS within the EuRegio is still complicated by differences between national / regional organisation and finaning systems for emergency services as well as by the unsatisfactory legeal framework conditions for cross-border cooperation.

Based upon the above-said, one can summarise **the most important elements of good practice** as follows:

(1) the long-standing and comprehensive contractual arrangement on cost coverage for cross-border healthcare treatments of Bavarian patients that public health insurance funds in Bavaria have established with the clinics in Salzburg;

(2) the close cross-border cooperation among hospitals in the EuRegion in fields such as specialised healthcare services and education / training;

(3) the explicit and detailed consideration of cross-border cooperation on medical emergency services in the Bavarian law on emergency services;

(4) the smooth operational functioning of medical emergency service provision despite the high number of very diverse actors involved;

There are nevertheless a number of opportunities for further improving the provision of healthcare and emergency medical service in the EuRegio that will be analysed in following chapter (see: section 5.2).

5 The future of CPS in the EuRegio

5.1 Perspectives for cross-border wastewater treatment

5.1.1 CPS as a response to changing legal and political context conditions

The stock-taking of existing CPS in the field of wastewater treatment (see: section 4.2) shows that cooperation works smoothly since many years even though a specific legal framework for this cooperation does not exist. However, the nationally transposed EU environmental and water-related legislation introduces new rules and quality standards that are also challenging future cross-border wastewater treatment in the EuRegio.

The most relevant pieces of EU legislation are the Nitrates Directive (NiD)[182], the Urban Waste Water Directive[183] (UWWTD) and especially the Water Framework Directive[184] (WFD), with the latter directive also providing the basis for an adoption of more targeted legislation. Examples are the revised Groundwater Directive[185] and especially the Environmental Quality Standards Directive (EQSD)[186]. The EQSD is used as a yardstick for monitoring the reduction of water pollution from priority substances in order to achieve a good chemical status of surface waters that the WFD expects to be reached in 2027. Of relevance within this context is also the recent Commission proposal for a revision of the 1998 Drinking Water Directive (DWD), which was published on 1st of February 2018[187].

Compliance with this broad range of legal provisions and especially with the long-term objectives set out by Article 4 of the WFD (i.e. achievement of a "good status" for all ground and surface waters in the EU) has already induced changes of regional-level environmental and water-related policies in Bavaria and the Land of Salzburg. These policy changes put increasing pressure on local-level actors in the EuRegio to adapt their own wastewater treatment policies, but also create opportunities for establishing new CPS.

This overall process is now illustrated for three closely inter-related topics, which were also discussed at the CPS stakeholder workshop realised in the EuRegio: (1) the necessary adaptation of local wastewater treatment plants, (2) the disposal and re-use of municipal sewage sludge and (3) potential risks emerging from a presence of micro-pollutants in the effluents of wastewater treatment plants.

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[182] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

[183] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment, as amended by Commission Directive 98/15/EC of 27 February 1998.

[184] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

[185] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration.

[186] Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013, amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy.

[187] Proposal for a Directive of the European Parliament and of the Council on the quality of water intended for human consumption (recast). Brussels, 1.2.2018. COM(2017) 753 final, 2017/0332 (COD).

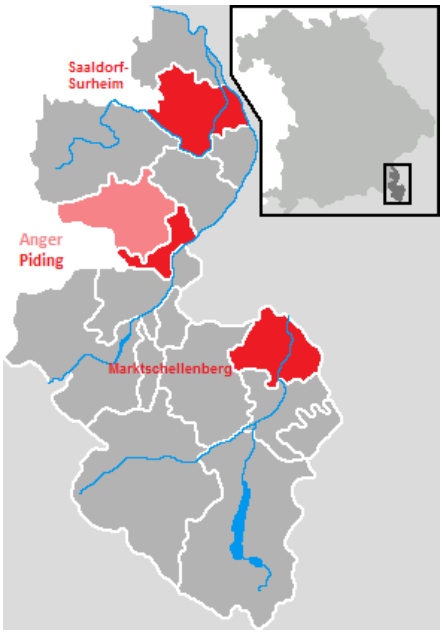
5.1.2 Necessary adaptations of local wastewater treatment plants

Our analysis has shown that the establishment of a CPS can be an efficient alternative solution to a necessary modernisation of local wastewater treatment plants, for which often considerable public investments have to be realised. These investments are a heavy burden especially for smaller municipalities and also influence the level of sewage charges that citizens have to pay in a medium to long-term perspective.

Own research and also contributions of participants at the stakeholder workshop revealed that 3 municipalities in the county Berchtesgadener Land (i.e. Saaldorf-Surheim, Piding / Anger, Marktschellenberg) are already discussing cross-border wastewater treatment as one potential option for coping with a necessary modernisation or capacity enlargement of their existing domestic treatment facilities (see: map 5-1).

These options focus all on transferring sewage to the wastewater treatment plant "Siggerwiesen" of the RHV Greater Salzburg.

Map 5–1 Municipalities, Berchtesgadener Land



Own adaptations of source map (Wikimedia Commons)

The first case is the small municipality of Marktschellenberg with its 1,785 inhabitants. Some of its border-close settlement parts ("Bramstein" and "Zill" estates) are already connected to the main collector of the RHV Tennengau-Nord. As new legal provisions in Bavaria make it unlikely that the municipality's outdated wastewater treatment plant can be operated in its existing form beyond 2020 (i.e. the operating permit for the plant expires in 2019), three possible options were examined by the municipality and also publically discussed in spring 2018

Two options relate to an intra-Bavarian solution: these are a renovation of the existing plant or the construction of a completely new plant. For a new construction, the municipality would have to hire two additional persons as operation staff and also buy additional land, but not receive any public subsidies from higher level administrative authorities. The transmission of sewage to the RHV Tennengau-Nord is the third option, which could receive public subsidies and in the whole be probably cheaper by half. Moreover, this option would allow to partly or fully decommission the existing municipal plant and also ensure a more effective treatment of sewage at the much better equipped "Siggerwiesen" plant. During the public discussion, however, several citizens expressed concern about this cross-border option because they

feared that a more than 30 years lasting sewage transferral contract would create a strong dependency in terms of fees[188].

Nevertheless, official discussions on the cross-border option have further progressed and the conclusion of a local contract on sewage transferral with RHV Tennengau-Nord as well as the start of construction works for establishing a connection sewer are scheduled for 2018[189].

The second case is the municipality of Saaldorf-Surheim, which has 5,456 inhabitants and is located north of the city of Freilassing in the county Berchtesgadener Land. The river Salzach marks the eastern municipal boundary and is also the state border with Austria / the Land of Salzburg. The municipal territory is crossed by the river Sur that flows into the river Salzach. In the sub-community Abtsdorf, there is the nature reserve “Abtsdorfer See” at the lake of the same name that also includes a protected wetland named “Haarmoos”.

The border municipality is currently challenged with upgrading / modernising its two local wastewater treatment plants in Saaldorf and Surheim as well as with rehabilitating the related local sewer networks and other relevant facilities. This has become necessary due to stricter environmental / water-related laws and especially the poor cleaning performance of the treatment plant in Saaldorf with its lack of capacity[190]. The latter also adversely affects the water quality of a brook (Mühlbach) that receives the cleaned discharge water of the plant, which then flows into the river Sur and subsequently into the river Salzach.

According to an external engineering study commissioned by the municipality, significant investments must be made for upgrading the treatment plants and also for rehabilitating the sewer system, with the entire process being expected to take decades. The sewer rehabilitation is currently running and will be completed in Saaldorf until mid-2018, while an evaluation of damage at the sewers of Surheim have only started[191].

For coping with these substantial modernisation needs, various options with a medium to long-term perspective are currently explored: (1) a continuing operation of both municipal treatment plants and their adaptation to legal requirements, (2) the use of only one common wastewater treatment plant in Surheim and a decommissioning of the plant in Saaldorf[192], or a

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[188] Berchtesgadener Anzeiger (2018)

[189] Evidence from discussions at the „CPS Stakeholder Workshop“

[190] The current biological wastewater treatment plant was built in 1974 and since then, several upgrading and modernization measures have been implemented (1989, 2002, 2005). At the moment, around 1,250 population equivalents are connected to the plant in Saaldorf. Saaldorf is currently dewatered by a mixed system, which means that wastewater and road run-off water as well as rainwater are completely introduced into the wastewater treatment plant, causing a wastewater flow in 2015 at around 102,000 cubic meters. This inflow can only be reduced by a sewer-based separation of wastewater and rainwater, to which the community is also forced by law. Such a separation already exists at the Surheim wastewater treatment plant.

[191] BGLand24.de (2015b) ; Heimatzeitung (2018a)

[192] Planning for a future-oriented modernisation of the wastewater treatment plant in Surheim (estimated cost: EUR 3,500,000) by using relatively new equipment of the Saaldorf plant. This would allow operating the wastewater treatment plant in Saaldorf until 2022 and help gaining the necessary time for planning next steps. In the long term, however, the wastewater treatment plant in Saaldorf should be abandoned. The wastewater accumulating in Saaldorf is then directed to Surheim (cost: EUR 800,000) or pumped through a sewage water pressure line from Saaldorf to Obersurheim (cost: EUR 200,000).

decommissioning of both municipal plants in the long term (30-40 years) that could become possible either (3) by a Bavarian-sided transfer of wastewater and its purification at the plant of the city of Freilassing or (4) by an "exportation" of wastewater to the Austrian side and its cleaning at the "Siggerwiesen" plant of the RHV Greater Salzburg. First discussions on this last option had already taken place in November 2014 with the management of the "Siggerwiesen" plant and the mayors of Anthering and Nussdorf. In December 2014, the association's member assembly decided that a connection of Saaldorf-Surheim to the "Siggerwiesen" plant would in principle be possible[193].

However, the discussion in the municipal council of spring 2018 shows that a majority of the council members sees a transfer of sewage to the "Siggerwiesen" plant negatively. This position is partly motivated by a feared dependence on the RHV Greater Salzburg, but also because of the high investment cost (i.e. drilling under the river Salzach for a connection pipe) and potential risks emerging for the "Haarmoos" wetland that is protected under the fauna, flora habitat and birds directives. Due to this, it was decided to further explore the option of a connection to the neighbouring city of Freilassing for which also additional information on the city's medium to long-term wastewater disposal planning shall be gathered[194].

The third case is the wastewater treatment plant in the municipality of **Piding,** which is operated by the local public wastewater association "Saalachtal" (Abwasserzweckverband Saalachtal, AZV)[195]. The plant was commissioned in 1977 and is designed for a capacity of 14,400 population equivalents. It currently treats local sewage from the association's member municipalities Piding (5,432 inhabitants) and Anger (4,483 inhabitants) as well as commercial wastewater from the dairies "Berchtesgadener Land-Chiemgau eG" and a laundry[196].

Despite numerous improvement measures realised in the past (2000, 2007), the actual capacity demand of the plant is significantly higher than the official value. Moreover, also a strong increase of capacity demand by the dairies Berchtesgadener Land is expected. Since the water law permit for a discharge of wastewater from the plant expires on 31.12.2020, the municipality of Piding has taken in May 2018 a basic policy decision on examining an extension concept for the wastewater treatment plant. This concept foresees a two-stage capacity-extension of the plant to 90,000 population equivalents, which would establish the largest wastewater treatment plant in the county of Berchtesgadener Land. An initial gross cost estimate foresees projected construction costs at around EUR 8.2 million. This sum takes into account additional costs, but not the increasing operating costs linked to the extension. The latter are also of relevance, as the management of a treatment plant of this size will require the recruitment of additional personnel. The planned extension costs for the

[193] BGLand24.de (2015b)

[194] Gemeinde Saaldorf-Surheim (2018)

[195] The local public wastewater association "Saalachtal" consists of the neighbouring municipalities of Piding and Anger and assumes for these communities the task of wastewater treatment.

[196] Gemeinde Piding (2018)

plant will be distributed to the municipalities of Piding and Anger as well as to the dairies Berchtesgadener Land[197].

At a more recent presentation of this concept to the municipal council of Anger (June 2018), also alternative options to a capacity-extension of the plant were presented. While the option of transferring sewage to the RHV Greater Salzburg would be possible (i.e. the plant in "Siggewiesen" still has a free capacity of 150,000 population equivalents) and is currently also examined, the option of transferring sewage to the Bavarian neighbour city of Bad Reichenhall is rather unlikely because they only dispose of a capacity of 15,000 population equivalents[198].

The above-mentioned examples show that a further expansion of CPS in the field of wastewater treatment is already considered within the EuRegio, but also that the final outcome of ongoing discussions on the Bavarian side is in several cases not yet fully clear. However, a possible use of the cross-border option also needs to consider restrictions that exist on the Austrian side. They emerge from the statutes and cooperation contracts of the RHV Greater Salzburg, which require the upholding of a reserve capacity for its own members / partners at the "Siggerwiesen" plant to cope with a potentially increasing capacity demand on the Austrian side[199].

5.1.3 Disposal and re-use of municipal sewage sludge

Another important issue with considerable medium to long-term implications is an environmentally sound disposal and re-use of sewage sludge, which is currently regulated by EU and national level legislation on waste disposal and fertiliser use.

Sewage sludge emerges as an inevitable by-product of municipal wastewater treatment, but some disposal and re-use practices can return a large number of pollutants previously separated from household or industrial wastewater to the environment. Adverse impacts can emerge from a landfilling of sewage sludge, but also from a use by agriculture where sewage sludge is applied on arable land as fertiliser due to its relatively high nitrogen and phosphate content. Thermal treatment of sewage sludge has therefore become the most important alternative disposal and re-use path, with different practices being already in use (i.e. co-incineration in a coal-fired power plant, a waste-to-energy plant or a cement plant as well as mono-incineration in specific sewage sludge incineration plants). Also other approaches such as composting, biochar production by means of hydrothermal carbonation and sewage sludge gasification do exist. However, the latter processes are still in a research and development stage and have not been able to prevail on the market because of the high cost.

[197] BGLand24.de (2018)

[198] Heimatzeitung (2018b)

[199] Evidence from discussions at the „CPS Stakeholder Workshop"

While a disposal of untreated sewage sludge on landfills is already since a while no longer possible in Germany and Austria[200], especially the application of sewage sludge on agricultural land and its use for landscaping or horticultural purposes are in the focus of increasingly restrictive environmental and water-related legislations.

A limitation of these practices is already the case in **Austria**, as the country-wide long term evolution shows that especially landfill deposition and to a lower extent also agricultural application of sewage sludge have decreased between 1995 and 2014. Conversely, an incineration of sewage sludge and also other re-use practices have considerably grown[201]. This trend change also occurred in the Land of Salzburg, where an agricultural application of sewage sludge was traditionally low due to the strong presence of bio-agricultural food production. Agricultural application is today prohibited in the Land of Salzburg according to the regional soil protection legislation in force, which in Austria is a regulatory matter of the federal states (i.e. each federal state has its own regulations stipulating whether and to what extent sewage sludge can be applied to soils)[202].

A similar long-term trend change of sewage sludge disposal / re-use practices has also taken place in **Bavaria**[203]. In 2015, the 2,600 Bavarian municipal wastewater treatment plants have accumulated around 266,000 tonnes of sewage sludge dry matter: 63,2% of this was incinerated, but 24% was still used for re-cultivation measures or landscaping and 14,8% applied by agriculture[204]. However, the current Land-level policy is becoming more and more restrictive on the re-use of sewage sludge for agricultural, landscaping or horticultural purposes and it is the stated goal of the Bavarian government to completely end these practices in the foreseeable future[205]. When looking at the most recent data available for the two Bavarian member counties of the EuRegio (2013), it turns out that the individual situations strongly differ from one another[206]. Future policy changes in Bavaria are likely to affect the county of Traunstein more strongly than the county of Berchtesgadener Land.

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[200] Since 1 June 2005, the landfilling of sewage sludge is in Germany only permitted after pre-treatment in an incinerator or after mechanical-biological treatment (see: BMU, 2018). Since the entry into force of the Austria-wide Landfill Ordinance in 2008 (Federal Law Gazette II No. 104/2014), untreated or only dewatered sewage sludge cannot be landfilled any longer (see: Vanas, 2016, p.28).

[201] Evolution of shares of specific recovery/recycling modes in the total occurred sludge volume: landfill deposition: decrease from 31% (1995) to 1% (2014); agricultural use: decrease from 23% (1995) to 17% (2014); incineration: increase from 34% (1995) to 50% (2014); other modes: increase from 12% (1995) to 32% (2014). See: BMLFUW (2016), pp.26, 27

[202] Vanas (2016), pp.22-24

[203] Between 1988 and 2014, agricultural application has decreased sharply since the mid-1990s, while thermal treatment has increased and the use in re-cultivation or landscaping has remained at a high level. See: Bayerisches Landesamt für Umwelt (2018b)

[204] Bayerisches Landesamt für Umwelt (2018b)

[205] Bayerisches Landesamt für Umwelt (2018a)

[206] In the county of Berchtesgadener Land, the total sludge accumulated in 2013 by biological wastewater treatment amounted to 1,919 tonnes of dry matter: around 62% of the total were incinerated, while 17% were used by agriculture and 5% for landscaping. In the county of Traunstein, the corresponding figures for 2013 are as follows (total: 3,012 tonnes of dry matter): around 27% were incinerated, while 52% were used by agriculture and 18% were used for landscaping. Own calculations based on figure in: Bayerisches Landesamt für Statistik (2013), p.61

Thermal treatment of sewage sludge will thus also in Bavaria become the predominant disposal mode, but this creates new demanding tasks and also additional cost for local authorities. Incineration requires that municipal sewage sludge is first dewatered to reduce its volume and additionally also dried for certain combustion processes. These necessary and important first steps for thermal sludge treatment often require the setting up of new local infrastructures for accomplishing this task. Moreover, also long distances for transporting pre-treated sewage sludge to the currently operating Bavarian incineration facilities or to facilities in other German Länder[207] is a further aspect (and cost factor) that needs to be considered.

For supporting municipalities in accomplishing these tasks, the Bavarian State Office for Environment (Landesamt für Umwelt) had already in 2011 published a "planning guide" for local sewage sludge disposal. This document is meant to be a tool for municipal decision-makers by which they can assess and select the different treatment methods for sewage sludge up to thermal disposal. In order to present a realistic "exit perspective" from agricultural use to the large number of small wastewater treatment plants in Bavaria, particular attention was paid to inter-municipal cooperation[208]. However, the option of setting up cross-border cooperation on this matter is not explored by the document.

Nevertheless, **a first public service on cross-border disposal of municipal sewage sludge is already operating in the EuRegio since 2016.** The municipal council of Bayerisch Gmain adopted a local sewage sludge disposal concept that foresees incineration in Austria and also a cooperation with the RHV Greater Salzburg's environmental facilities at "Siggerwiesen". The municipality has opted for this cross-border solution because an agricultural application of sewage sludge from the municipal wastewater treatment plant had created growing problems in the past. Before this solution, sewage sludge was collected by a transport company and brought to farmers who have applied it as fertiliser on their fields. During the winter period, when fertiliser application is prohibited, sewage sludge could not be removed and the municipality had to establish a larger sewage sludge basin for temporary storage. This motivated Bayerisch Gmain to search for an environmentally and economically sensible alternative, which was established through the new and forward-looking cooperation initiative. **Liquid sewage sludge from Bayerisch Gmain is transported since July 2016 by truck to the environmental facilities "Siggerwiesen"of the RHV Greater Salzburg,** where it is squeezed and dried **and subsequently transported to a suitable incineration plant that is located in Lenzing near Vöcklabruck.** Thanks to this new cooperation, Bayerisch

[207] In 2015, Bavarian sewage sludge was thermally treated at the following sites in Bavaria: six waste incineration plants (Coburg, Würzburg, Bamberg, Munich, Geiselbullach, Ingolstadt, Schweinfurt, Schwandorf), five mono-incineration plants (Neu-Ulm, Munich-Großlappen, Gendorf, Straubing and Altenstadt), two Bavarian cement plants as well as the coal-fired power plant in Zolling. In addition, Bavarian sewage sludge was also transferred to the German Länder of Baden-Württemberg, Brandenburg, Bremen, Hesse, North Rhine-Westphalia, Lower Saxony, Rhineland-Palatinate, Saxony, Saxony-Anhalt and Thuringia. Incineration took place in there almost exclusively in coal-fired power plants. See on this: Bayerisches Landesamt für Umwelt (2018b)

[208] Bayerisches Landesamt für Umwelt (2011)

Gmain does not have to build an own local mud press and also no drying hall, which represents medium-term savings of around EUR 600,000 for the municipality[209].

However, this new CPS required a rather complex legal framework that was not easy to plan and establish. A first agreement had to be negotiated with the operator of the incineration plant in Lenzing, which the municipal council of Bayerisch Gmain approved in summer 2016 by a large majority (1 vote against). Since the sewage sludge has to be delivered pressed and dried at the incineration plant, also other agreements / contracts had to be prepared: a sewage disposal agreement with the RHV Greater Salzburg that regulates the takeover and pre-treatment of liquid sewage sludge at the "Siggerwiesen" facility as well as a corresponding price agreement, but also an order contract with a certified transport company that ensures the onward transport of pre-treated sewage sludge from "Siggerwiesen" to the incineration plant in Lenzing. The most substantial hurdle was to obtain the necessary “notifications” and permits from Land-level and Federal-level approval authorities, which are the legal base of the entire cross-border initiative[210]. The entire disposal arrangement was concluded with an "indefinite" time horizon in order to establish a long-term and safe disposal solution for the municipality, provided that the notification to be demanded/renewed each year is extended for both countries[211].

Contributions of participants at the stakeholder workshop revealed that **a similar cross-border disposal initative is currently planned by the Bavarian municipality of Saaldorf-Surheim, which involves the same actors on the Salzburg-side.** Due to this, the local authorities of Bayerisch Gmain have shared their practical experiences with colleagues in Saaldorf-Surheim and also practically assisted this emerging initiative by transferring relevant documents or contracts to them[212].

Nevertheless, the already existing CPS and also the new initiative will have to (re-)considered in the light of the politically planned introduction of mono-incineration of sewage sludge in both countries. While the new German sewage sludge ordinance of 3. October 2017 (Klärschlammverordnung) has already introduced restrictions to land use of sewage sludge as well as an obligation to phosphorus recovery[213], a stimulation of phosphorus recovery from sewage sludge ashes is still under discussion in Austria. Although there are still many uncertainties linked to this process (i.e. exact legal provisions, existence of market potentials, lack of experience in Austia etc.)[214], changes will particularly affect the Land of Salzburg

[209] Gemeinde Bayerisch Gmain (2016); SPD Bayerisch Gmain (2016); Reinhalteverband Großraum Salzburg (2016a)

[210] Notification DE 1350/181491 and approval by the Government of Upper Bavaria dated 23.05.2016. Decision of the Federal Ministry of Agriculture, Forestry, Environment and Water Management of 27.04.2016 on the cross-border transfer of waste.

[211] Gemeinde Bayerisch Gmain (2016); SPD, Bayerisch Gmain (2016)

[212] Evidence from discussions at the „CPS Stakeholder Workshop“

[213] Umweltbundesamt (2018); Langenohl (2017)

[214] Evidence from discussions at the „CPS Stakeholder Workshop“

because it has, after Vienna, the second highest level of sewage sludge incineration among all Austrian Länder (i.e. currently only co-incineration)[215].

5.1.4 Micro-pollutants in effluents of wastewater treatment plants

A final issue of potential future relevance are the medium- and long-term risks associated with a presence of micro-pollutants (see: box 5-1) in surface water bodies (i.e. rivers and lakes) and groundwater bodies.

Box 5-1 What are micro-pollutants[216] and which are the associated risks?

There is no official definition for micro-pollutants (often also referred to as "trace substances"), but they can be circumscribed as unwanted, microscopically small, dissolved substances that occur in surface waters or groundwater in concentrations ranging from nanograms to a few micrograms per litre of water.

Micro-pollutants emanate from the currently about 100,000 chemicals on the EU market, which are partly used individually and partly used mixed in a high number of products. This includes both natural substances (e.g. hormones, toxins of cyanobacteria) and a wide range of man-made chemicals (e.g. food additives, active ingredients in medicines, fragrances in cosmetics and cleaning agents or plasticisers in plastic, but also industrial chemicals, corrosion inhibitors, pesticides and biocides). Micro-pollutants are most often introduced into waters through the human use of everyday products, because chemical accidents and illegal discharges are rare today.

As micro-pollutants are persistent and bioactive, they can be toxic to all kinds of living organisms: some of them are immediately and acutely harmful, while others are only by chronic exposure. Micro-pollutants may also form new harmful mixtures in water or even cause long-term hazards due to their bio-accumulating nature.

This issue is partly addressed by the Environmental Quality Standards Directive (EQSD), which has established new discharge limits for a number of priority substances in the field of water policy that come into force in 2018. EU Member States are therefore obliged to submit by 2018 additional measures and monitoring programmes for these substances to the Commission, so that a "good chemical status" of all surface waters can be achieved by 2027. When the EQSD was amended in 2013, also a watch list mechanism was established to require temporary monitoring of other substances for which evidence suggested a possible risk to or via the environment. A first watch list was adopted in 2015 (i.e. Commission Implementing Decision 2015/495/EU of 20 March 2015) that included a number of chemicals to inform the selection of additional priority substances[217].

The evolving EU-legislation and its subsequent national transposition will also considerably influence on local wastewater treatment, as **the "cleaned" effluents of wastewater treatment plants that are discharged into rivers are the dominant entry pathway for many micro-pollutants**[218]. This is due to the fact that the three purification stages of modern

[215] Amann/Zessner/Zoboli (2017)

[216] MICROPOLLUTANTS.COM (2018); Bayerisches Landesamt für Umwelt (2016), pp.2,3

[217] European Commission (2016)

[218] Aside to this, there are also other diffuse entry pathways by which micro-pollutants are introduced into surface waters or groundwater. These are products (i.e. directly introduced into water or through rainwater / stormwater

wastewater treatment plants (i.e. sequential use of mechanical, biological and chemical purification processes) are not specifically designed to fully remove these substances. However, the latter can in combination with more advanced treatments (e.g. processes of ozonation, membrane separation, adsorption and biodegradation) lead for a number of critical substances to elimination rates ranging from above 90% to 99%[219]. A deployment of such additional processes in wastewater treatment plants, commonly known as the "fourth purification stage", can therefore significantly improve an elimination of micro-pollutants[220].

Considering the above-said, it thus becomes clear that wastewater treatment plants have, sooner or later, to implement more extensive measures for better cleaning wastewater. So far, however, evidence from research carried out in Germany and Austria shows that investments for rolling out a "fourth purification stage" will be substantial and most likely make sense only in class 5 municipal wastewater treatment plants (i.e. plants serving more than 100,000 inhabitants). An introduction of this fourth purification stage will not only generate long-lasting direct financial impacts on organisations operating wastewater treatment plants, but also have consequences for society and the environment and thus impact the achievement of the EU's long-term sustainability goals[221].

In case of small and medium-sized wastewater treatment plants, however, affordable solutions that can be applied for eliminating micro-pollutants are currently sill lacking. As these plants are very frequently found in rural areas or sparsely populated areas, it also becomes clear that along many EU border the development and implementation of cross-border solutions offer advantages for coping with this challenge.

The above-mentioned aspects also tend to affect future cross-border wastewater treatment in the EuRegio, albeit in very different ways. The size parameters of the "Siggerwiesen" plant operated by the RHV Greater Salzburg can justify the potential deployment of a fourth purification stage that would require further public investments, which may then also have consequences for the connected Bavarian municipalities. A deployment is unlikely to take place in case of the two smaller plants in Bayerisch Gmain and Unken, but here there can be a need to search for size-adeqaute alterntive solutions that may help reducing potentially existing micro-pollutants.

All this is for the time being rather speculative, because detailed information on the "chemical status" and especially the presence of micro-pollutants in the border rivers Saalach and Salzach as well as in their affluants is currently not publically avilable[222]. Also discussions at

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runoff from cities), agriculture (e.g. veterinary drugs, pesticides and fertilizers introduced by surface run-off from agricultural land) and air (e.g. fine dust from chimneys, tire abrasion, asbestos from contaminated sites, dioxin from large fires).

[219] European Commission (2016)

[220] European Commission (2016); Fraunhofer-UMSICHT (2018)

[221] Umweltbundesamt (2015); Sekin (2016); Seifert/Krannich/Guenther (2017)

[222] In a report on the implementation of the Water Framework Directive in Bavaria, detailed monitoring evidence is presented for the "ecological status". With respect to the "chemical status", however, only the following official

the stakeholder workshop showed that there is still little knowledge on the likely presence of micro-pollutants in surface waters of the EuRegio. At the same time, however, stakeholders clearly stressed that tackling eventual problems cannot be in the sole responsibility of actors at the "end of the pipeline". Rather, this needs to be a society-wide process that has to involve also the producers of chemicals and goods as well as the final consumers[223].

5.1.5 Potential next steps in the EuRegio

The EuRegio has possibilities for further stimulating CPS in the field of wastewater treatment, but the scope for action is very different in the three above-mentioned topics. When doing so, however, important contextual factors with a medium to long term relevance should be considered that are summarised in a nexus model at the end of this chapter (see: section 5.3).

(1) The EuRegio should initiate and animate an ongoing cross-border work process for exploring a long-term solution on a disposal and re-use of municipal sewage sludge. Discussions at the stakeholder workshop revealed a number of key issues that can be a starting point for this reflection process.

The already existing and still planned CPS can be realised because the volumes of sewage sludge transported to the environmental facilities "Siggerwiesen" of the RHV Greater Salzburg are rather small and do not represent a significant capacity charge for the existing installations. However, a potential widening of this cross-border approach to other Bavarian municipalities is seen sceptical by the RHV. This is mainly due to the fact that higher sewage sludge volumes would create a real capacity problem at the facility in Siggerwiesen, but also because upcoming changes of the policy context make this only a temporary solution (i.e. up to 3 years)[224].

A changing policy context can emerge from the introduction of mono-incineration of sewage sludge for stimulating a recovery of phosphorus from sewage sludge ashes, which would have strong long-term implications on both sides of the border. In the Land of Salzburg, this change may require a revision of the current sewage sludge incineration practice that focuses only on co-incineration. On the Bavarian side, it seems that the most fesable medium to long term solution is the setting up of a large-scale inter-county cooperation for establishing and running a close-by mono-incineration plant for sewage sludge[225].

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summary statement is found (in translation): "*Basically, it should be noted that in Bavarian water bodies, apart from ubiquitous substances, only a few pollutants are contained in water that can be harmful to aquatic life and sometimes even for humans. Nevertheless, the chemical status of all Bavarian surface waters has currently to be assessed as "not good". Responsible for this are difficult to degrade ubiquitous substances present in nature (e.g. mercury). If, however, these ubiquitous substances are not included in the assessment of the chemical status, then all lakes and over 95% of the rivers and streams have a perfect water quality*." See: Bayerisches Staatsministerium für Umwelt und Verbraucherschutz (2017), p.26

[223] Evidence from discussions at the „CPS Stakeholder Workshop"

[224] Evidence from discussions at the „CPS Stakeholder Workshop"

[225] Evidence from discussions at the „CPS Stakeholder Workshop"

Bearing this in mind, the work process should therefore keep track of legal context developments on both sides of the border and also explore potentials for a new CPS that allows establishing a comprehensive joint solution with long-term benefits for the entire cooperation area.

(2) The EuRegio should help initiating a joint action for increasing knowledge and awareness about a likely presence of micro-pollutants in the border rivers Saalach and Salzach as well as in their affluants. Of particular relevance could be the joint conceptualisation and testing of a cross-border pilot approach that aims at exploring the presence of such substances and, if this should be the case, also at detecting their main entry pathways. This pilot action could be launched in close connection to the wider Bavarian-Austrian coordination process that is established for implementing the European Water Framework Directive in the international river basin district Danube[226].

Inspiration could be taken from the Interreg V-A programme Greater Region (DE-FR-LU-BE), where such a cross-border pilot approach is currently developed and implemented. In the predominantly rural border zone that characterises the catchment area of the border river Sauer, residues of medicines and pesticides or other micro-pollutants are increasingly detected in low concentrations. The project "EmiSûre" aims to jointly develop a cross-border action plan and to actually test procedures that enable small wastewater treatment plants reducing the amount of micro-pollutants in surface water bodies (see box 5-2).

Box 5-2 The Interreg V-A project "EmiSûre" in the Greater Region (DE-FR-LU-BE)[227]

The project EmiSûre is carried out by different public actors of Rhineland-Palatinate and Luxembourg (e.g. operators of wastewater treatment plants, universities, ministries), but also involves a wide range of other partners from the Saarland and neighbouring regions in Belgium and France. The project also involves the Municipal and City Association of Rhineland-Palatinate and the German Association for Water, Wastewater and Waste (DWA).

EmiSûre develops an action plan for reducing micro-pollutant emissions in the cross-border catchment area of the border river Sauer by means of data collection, material flow modelling and scenario development. Also innovative and energy-efficient wastewater treatment processes are tested in this regard. The latter are deployed on a pilot basis at two small wastewater treatment plants that are situated at the German-Luxembourg border river Sauer and are also cleaning sewage on a cross-border basis (Reisdorf/Wallendorf; Echternach). The effort and benefits of these purification techniques are tested at these plants and also evaluated, for which a set of assessment criteria is used: the capacity to reduce micro-pollutants and the bacterial contamination of the water, energy consumption, the associated operation cost and the required deployment of personnel. Also close-to-nature processes for wastewater treatment are investigated.

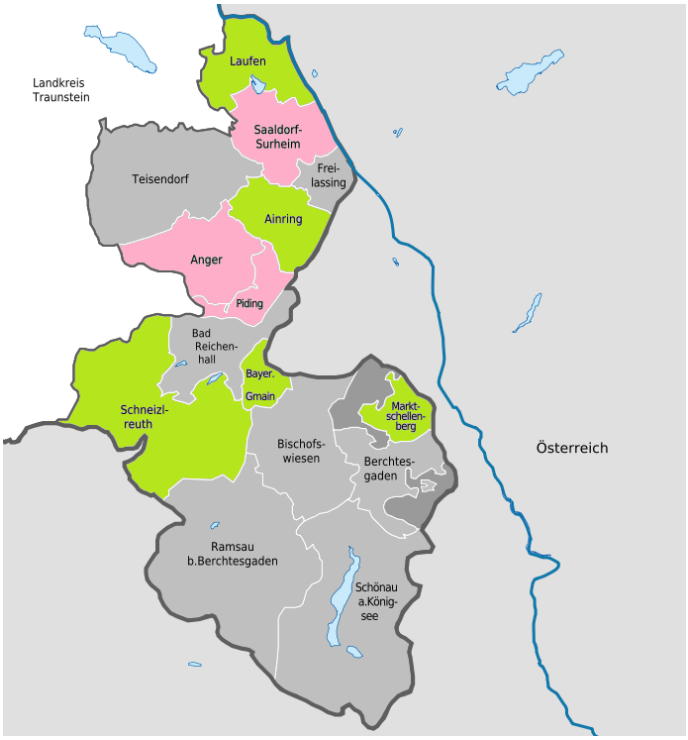
[226] International coordination on the WFD-implementation in the river basin district of the Danube takes place at the level of the “International Commission for the Protection of the Danube River” (ICPDR) in Vienna. The representation of German interests is ensured by Bavaria due its large share in the German-sided catchment area. Coordination between Austria and Bavaria is carried out at the level of the Expert Working Group "Protection and Management of Waters" of the Permanent German-Austrian Water Commission established under the Regensburg Treaty (in force since 1st of March 1991), which meets at least once a year. See: Koordinierungsdokument Bayern – Österreich (2009), p.3

[227] Ministerium für Umwelt, Energie, Ernährung und Forsten Rheinland Pfalz (2017)

(3) The EuRegio has only a very limited potential for action with regard to stimulating the set up of new CPS on wastewater treatment that aim at better coping with changing regional / local context conditions. This is due to the fact that most border-close municipalities / towns in the county of Berchtesgadener Land are either already connected to wastewater treatment plants in the Land of Salzburg (i.e. Laufen, Ainring, Schneitzelreuth, partly Marktschellenberg), or because options for a full connection (i.e. Saaldorf-Surheim, Piding) or an extended connection (i.e. Marktschellenberg) are currently being discussed.

With the existing and currently discussed CPS on wastewater treatment, the EuRegio is therefore on its way to reach an optimum level of service coverage in those border zones, for which joint approaches are actually making sense (see: map 5-2)

Map 5–2 Already existing and currently discussed CPS on wastewater treatment



Cities and municipalities aleady connected to a wastewater treatment plant in the Land of Salzburg, including a decided widening of an existing connection (Marktschellenberg).

Municipalities where discussions on a potential connection to a wastewater treatment plant in the Land of Salzburg are still ongoing.

Own adaptations of source map (Wikimedia Commons)

5.2 Perspectives for joint healthcare and emergency medical services

5.2.1 Possibilities for setting up new CPS and for improving existing CPS

The stock-taking of existing CPS in the fields of healthcare and emergency medical care (see: section 4.3) shows that persisting imbalances of service provision within the EuRegio are in both policy areas primarily caused by marked differences between the national / regional heathcare systems on either side of the border (e.g. different national / regional health policies, different public health insurance systems; different regional-level modes for organising and delivering emergency medical care etc.).

The realised interviews and also the discussions at the stakeholder workshop[228] revealed that **there are no cross-border needs for establishing new CPS in both thematic fields.** Despite the observed imbalances under both CPS and a number of shortcomings that persist at the operational level in case of emergency medical care, it appears that most key players from both sides of the border are largely satisfied with the current scope of cross-border service provision in the EuRegio.

Nevertheless, **the workshop participants have identified a number of potentials for further optimising CPSP** in the fields of healthcare and emergency medical care[229]. In order to be successful though, this optimisation requires in the both fields that parallel action is taken at two levels: joint action among the concerned stakeholders within the EuRegio (e.g. identification of the roots for persisting shortcomings; search for common solutions; joint "lobbying" of issues towards the competent government levels in both coutries etc.) and also joint action between the Länder governments / the policy-responsible administrations in Bavaria and Austria (i.e. establishment of more appropriate legal framework conditions for CPSP) .

5.2.2 Optimising the provision of cross-border healthcare services

The participants at the stakeholder workshop identified two aspects that can be starting points for join actions leading to a further optimisation of a cross-border provision of healthcare services within the EuRegio: (1) the still different scope of treatments offered on both sides of the border and (2) a predominantly "national" perspective that is guiding the planning of a provision of healthcare services on each side[230].

An appropriate response to both aspects is seen above all in **the achievement of a "coordinated health resource planning",** which also bears important potentials for improving the patients' situation in cross-border healthcare within the EuRegio.

Coordinated hospital planning implies that existing healthcare services of hospitals on one side of the border would have to be taken into account in the regional / local capacity planning

[228] Interviews (Bavarian Red Cross, Salzburg Red Cross; AOK-Bavaria); Evidence from discussions at the „CPS Stakeholder Workshop"

[229] Evidence from discussions at the „CPS Stakeholder Workshop"

[230] Evidence from discussions at the „CPS Stakeholder Workshop"

for hospitals on the other side. Rather than unilaterally expanding existing domestic healthcare services or building new and costly services already available across the border, coordinated planning would lead to a situation within the EuRegio, where primary care physicians on both sides of the border can systematically recommend patients to undergo an outpatient or inpatient treatment in a hospital on the other side of the border. This presupposes that public health insurance funds of both sides have concluded contracts with the concerned treating hospitals about a reimbursement of costs, which at present only the statutory health insurance funds in Bavaria have done. Moreover, the initiation of coordinated resource planning between the health care regions concerned requires a sufficiently strong political will on both sides of the border, which may, however, take some time to emerge.

In the short term, one could already **start searching for cross-border potentials that might qualify for coordinated health resource planning.** These potentials should not generate disadvantages for one or the other side (i.e. no gaining of patients at the expense of the other side), but result in common societal welfare gains[231].

A point of departure could be the highly specialised healthcare services for which inter-hospital cooperation already exists between both sides (e.g. ophthalmology, oral and maxillofacial surgery), but also innovative treatments or services that are currently available or newly developed on the Bavarian side[232] (see: section 4.3.3). This work process should also attentively examine different experiences made with a "pooling" of hospital resources at various EU borders[233]. Of particular importance are two examples at other parts of the Bavarian-Austrian border (see: box 5-3): one is successful and still ongoing (i.e. hospital cooperation Füssen-Reutte), while the other was partly ended after long years of joint collaboration (i.e. hospital cooperation Simpach-Braunau).

Box 5-3 Examples for hospital cooperation at the Bavarian Austrian border[234]

The **cooperation between the hospitals in Füssen (Bavaria) and Reutte (Tirol)** focusses on the provision of emergency care for patients with acute heart attacks. After the initial idea in 2009 and three years of negotiation, the cross-border heart center (Herz-Zentrum Füssen-Außerfern) was established in 2012 at the hospital in Füssen that includes a left heart catheter laboratory. Patients suffering from an acute heart attack are brought directly to the heart centre in Füssen. After the invasive procedure, further treatment of Austrian patients takes place at the hospital in Reutte. Subsequent bypass or valve operations are per-formed in Innsbruck. There is a sharing of material between the two hospitals, for example the provision of an ultrasound scanner by the hospital of Reutte that is placed at the heart centre in Füssen. Also a cross-border training of nursing staff, paramedics and medical doctors takes place. The public health insurances in Austria (TILAK) and Germany (AOK) deal directly with the re-imbursement of medical costs for the treatment of Austrian patients at the Heart centre Füssen/Reutte. There is shared funding of the heart centre, as the clinic Reutte payed part of the costs which were measured by the expected percentage of treated patients from Austria.

[231] Interview (AOK-Bavaria)

[232] e.g. innovative treatments in the field of bronchoscopy or minimally invasive, robot-controlled interventions in the abdominal area (Bad Reichenhall); new treatment capacities for patients in acute crisis situations (acute care).

[233] European Commission, SANTE (2018); European Commission, DG REGIO (2017);

[234] European Commission, SANTE (2016), pp.82-84, 89-92

Cooperation between hospital in **Braunau (Upper Austria) and the hospital in Simbach (Bavaria)** began in 1994 when Bavarian public health insurance funds asked the clinic in Braunau to provide emergency care for German patients. This was because the surgical ward in Simbach was closed due to a reorganisation. The request resulted in a contract regulating the treatment of trauma surgical patients in the emergency care unit of the clincic in Braunau. In the following years this contract was extended for paediatric treatments and it became also possible to use scans in Braunau for inpatients of the clinic in Simbach. In 2004, an internal medicine ward (with 29 beds) was relocated from the hospital in Braunau to the hospital in Simbach, based on a five year lease contract. Consequently, a process to build a "Braunau-Simbach European clinical center" started and both hospitals elected in 2007 a joint head of the department of internal medicine located at the hospital in Simbach. In 2008, a joint coronary angiography unit was set up at hospital in Simbach, which provided cardiological care for both regions and became a provate law based company in 2009 (COR GmbH). The idea to integrate more hospitals in the border region (Braunau, Simbach, Eggenfelden and Pfarrkirchen) into a joint European clinical centre came up and started to be negotiated in 2010. In 2011, however, there was an abrupt change as the German hospital operator decided to restructure the facility in Simbach. At the same time, also the Upper Austrian regional government developed a new hospital strategy. This led to a strategic change and the long-years lasting collaboration ended in December 2011. Since then, only the early agreement on emergency care is still running.

These preparatory reflections on joint potentials should also include efforts for improving the transparency / information about the offered health services for patients from both sides. From the point of view of Bavarian public health insurances, this seems to be currently better achieved on the Salzburg side than on the Bavarian side of the EuRegio[235].

Based on these activities, a cross-border process of consensus building on relevant topics should finally be started, which has to involve all actors from both sides of the border that are directly or indirectly concerned with hospital planning and financing (i.e. Länder governments, counties, clinics, public health insurance funds, self-governed medical intermediary organisations, relevant social partners etc.).

5.2.3 Optimising the provision of cross-border emergency medical services

The most important potentials for further improving cross-border emergency medical services within the EuRegio are emerging from the currently unsatisfactory legal framework conditions along the entire Austrian-German border.

There is no interstate agreement between Bavaria and the neighbouring Austrian Länder that regulates in more detail the practicalities of day-to-day mutual emergency aid in border-close zones, which actors from both sides are currently providing outside the event of major disasters. This creates a range of legal uncertainties and practical problems for cross-border rescue operations within the EuRegio, which are complicating the work of the active rescue personnel (see: box 5-4).

[235] Evidence from discussions at the „CPS Stakeholder Workshop"

Box 5-4 Persisting difficulties for cross-border emergency medical care in the EuRegio[236]

Blue-light interventions of emergency vehicles from Salzburg currently require an individual approval on the Bavarian side, especially when they are passing the so-called “Small German Corner” (kleines deutsches Eck). Each cross-border mission must be registered with the Bavarian police via the integrated dispatch centre in Traunstein (ILS-Traunstein). In the opposite direction, however, this approval is not practiced.

In some border-close areas of the EuRegio it makes sense to send the next available emergency rescue vehicle from across the border and not a vehicle that is disposed according to a domestic availability ranking. For this to become reality, however, adequate technology must have to be installed in both control centers and in all relevant emergency vehicles and, in addition, the settlement of associated costs needs to be clarified.

Emergency physicians from Bavaria or Austria who are picked up as crew members by an emergency ambulance from the respective other side cannot adequately secure their own mobile medical equipment, as technical fixation installations in vehicles are different. They can either work with "foreign" equipment in these vehicles which then may pose legal problems, or still take their own equipment into the vehicle with the risk that it is not sufficiently secured during rapid driving.

Bavarian ambulances vehicles (RTW and NEF) carry anesthetic / addictive substances on board, even if no doctor is present who is only allowed to do so. This is also the case for Austrian emergency vehicles (NEF, NAW, NAH). At the initiative of the EuRegio, a first attempt for a legal clarification was made in consultation with the head of the police directorate. However, it still needs to be finaly clarified whether an on-board carryage of these substances is legally secure in case of a cross-border operation.

In certain cases an emergency paramedic must administer medication that may also involve an application of anesthetic / addictive substance (i.e. so-called 2c measures). However, this practice is probably illegal on the Austrian side. Emergency paramedics in Austria are allowed to administer medication and to provide venous access under certain conditions, but in Germany it can be assumed that a legal basis for this is missing.

An intervention of rescue personnel in the context of an emergency mission is usually requested via the dispatch centres on either side of the border. While the intervention of a doctor is undisputed, there is still a lack of necessary recognition for rescue or emergency paramedics on both sides of the border. Bavarian paramedics may from a legal point of view not be allowed to intervene on the Salzburg side and vice versa. However, the Federal Republic of Germany is currently planning that an emergency paramedic can act without a doctor on ground of a predetermined delegation.

Clear differences exist between both sides as regards the qualification / further training of rescue personnel. Politically wanted, Austria is relying on a high degree of voluntariness in the provision of emergency services. In Germany, on the contrary, this is no longer possible due to the legally required training for becoming a “paramedic” (2 years) and, since 2014, also for becoming an “emergency paramedic” (3 years). These qualification levels cannot be reached by Austrian volunteers, as they are not able to complete such intense training aside to their actual professional activity.

Moreover, there is also no interstate agreement between Bavaria and the neighbouring Austrian Länder that stipulates clear rules for a settlement of cost linked to cross-border emergency medical interventions. Especially the public health insurance funds in Bavaria that are paying for border-crossing emergency interventions from Austria perceive the current absence of clear rules and criteria for service pricing levels, billing and reimbursement negatively. In practice, this creates often intransparency about the billed service charges of

[236] Interviews (Bavarian Red Cross, Salzburg Red Cross); Evidence from discussions at the „CPS Stakeholder Workshop“

rescue service providers and sometimes even leads to irritations regarding the non-profit orientation of service provision[237]. Although cost settlement is transparent and also working smoothly within the EuRegio, public health insurance funds of Bavaria consider that a contractual agreement on these matters should nevertheless be established for the entire Bavarian-Austrian border in a medium term perspective[238].

A solution to the above-observed difficulties within the EuRegio can only be achieved by improving legal framework conditions for a provision of cross-border emergency medical services. This, however, appears to be complicated for a number of reasons.

(1) Establishing a "local" solution within the EuRegio is difficult in the view of practitioners[239], as the observed weaknesses are mostly rooted in systemic factors. There is indeed the option of concluding a public-law contract between the "Zweckverband für Rettungsdienst and Feuerwehralarmierung" (ZRF) in Traunstein and task-bearers / service providers in Salzburg according to article 8 (1) of the Bavarian Rescue Service Act (BayRDG). This, however, requires a previous clarification of the financing of operations of Bavarian rescue units in neighbouring countries as well as of operations of non-Bavarian rescue units in Bavaria in accordance with article 8 (2) BayRDG). But as we have seen above, such a clarification for the entire Bavarian-Austrian border does not yet exist . Nevertheless, it should be noted that the “ZRF Passau” (Bavaria) has concluded in 2016 a bilateral public law contract based on article 8 with the cross-border air rescue service “Christophorus Europa 3” that is based in Suben/Lower Austria[240].

(2) An "overarching approach" is therefore a more suitable solution, which could result from the conclusion of a thematic interstate agreement between Bavaria and the four neighbouring Austrian Länder (Vorarlberg, Tyrol, Salzburg, Upper Austria). But also here there are difficulties, because a uniform agreement for the entire border is not adequate. This is mainly because the organisational and structural settings of rescue services are very different in the individual Austrian Länder[241]. This problem can, in principle, be circumvented by concluding four bilateral agreements, as each of them could better take into account the specific conditions in the individual Länder. Crucial for such a substantial “negotiating effort” is, however, that a sufficiently high problem pressure exists at all segements of the border and that the related needs are also politically perceived / recognised by the respective Land-level governments which will be the initiators of negotiation processes. In case of the EuRegio, however, some local actors are sceptical as to whether this is already the case.

[237] Interview (AOK-Bavaria)

[238] Evidence from discussions at the „CPS Stakeholder Workshop“

[239] Interview (ZRF Traunstein)

[240] See on this the CPS case study “Euregio Bayerischer Wald-Böhmerwald-Unterer Inn”

[241] Interview (ZRF Traunstein)

(3) Moreover, **also additional supporting measures are needed** for solving some of the above-identified problems, but these would have to be initated **by the Federal Government levels within each country** (i.e. adaptation of relevant federal laws). On the one hand, a stronger convergence of national rules / guidelines for education and further training of emergency paramedics is needed, in order to enable these persons an unhindered cross-border activity in patient care. On the other hand, also a stronger convergence of national rules / specifications for technical equipment is needed, in order to further optimise the conditions for cross-border emergency rescue operations (i.e. equipment of ambulances, ambulance detection, communication, etc.)[242].

5.2.4 Potential next steps in the EuRegio

There are possibilities for further stimulating CPS in the fields of healthcare and emergency medical care, but the focus of action is slightly different in each of these topics. Moreover, any future initiative has to take into account important contextual factors with a medium to long term relevance that are summarised in a nexus model presented under section 5.3.

(1) In the field of healthcare, the EuRegio should initiate and animate a medium-term work process among relevant stakeholders from both sides that explores how a "coordinated health resource planning" can be practically achieved. This process should be started as soon as possible, for instance by initiating a small-scale Interreg project that realises an explorative analysis of concrete healthcare resources and treatments that can be covered by coordinated planning. This initiative needs to directly involve relevant healthcare providers from both sides and also comprise regular discussion-rounds to facilitate consensus building. The outcome of this first step should then lay the ground for developing further actions that, among other, also mobilise relevant political stakeholders on both sides.

(2) In the field of emergency medical care, the EuRegio should initiate an awareness-raising process, which is addressing the political-administrative key actors levels of both sides of the border. Also here, the awareness-raising processes can be started with a small-scale project that establishes a detailed inventory of practical hurdles and shortcomings that are currently existing in the EuRegio. This inventory should be developed with the direct participation of relevant stakeholders from both sides of the border and, where possible, be underpinned by concrete case examples. Also options for potential technical / procedural / legal solutions should be further explored. The outcome this project should then be used for “sensibilising” the competent political-administrative levels in both Länder, with the main aim to kick-start further actions to be initiated by these levels.

5.3 Assessment of future CPS development in general

The previous analysis of future development perspectives shows that CPSP is already intense within the EuRegio and leaves rather **little scope for establishing new CPS,**

[242] Evidence from discussions at the „CPS Stakeholder Workshop“

especially because such processes are already underway in the field of wastewater treatment and sewage sludge disposal.

Nevertheless, **potentials for a further optimisation of CPSP** do exist in the fields of wastewater treatment (i.e. knowledge improvement on the presence of micro-pollutants in effluents), healthcare and emergency medical care. An optimisation of CPSP will most often result from medium to even long term cross-border work processes, which have to be thoroughly prepared and continuously supported by the relevant stakeholders in the EuRegio. This is because optimisation of CPSP will in some cases involve joint decisions on infrastructure matters and on substantial cost (i.e. expansion of wastewater treatment plants, joint disposal of sewage sludge, coordinated hospital resources planning), while in others an optimisation can be successful only if actors from different government levels and sectors jointly agree on a solution for addressing current problems or future development opportunities (i.e. healthcare, emergency medical services).

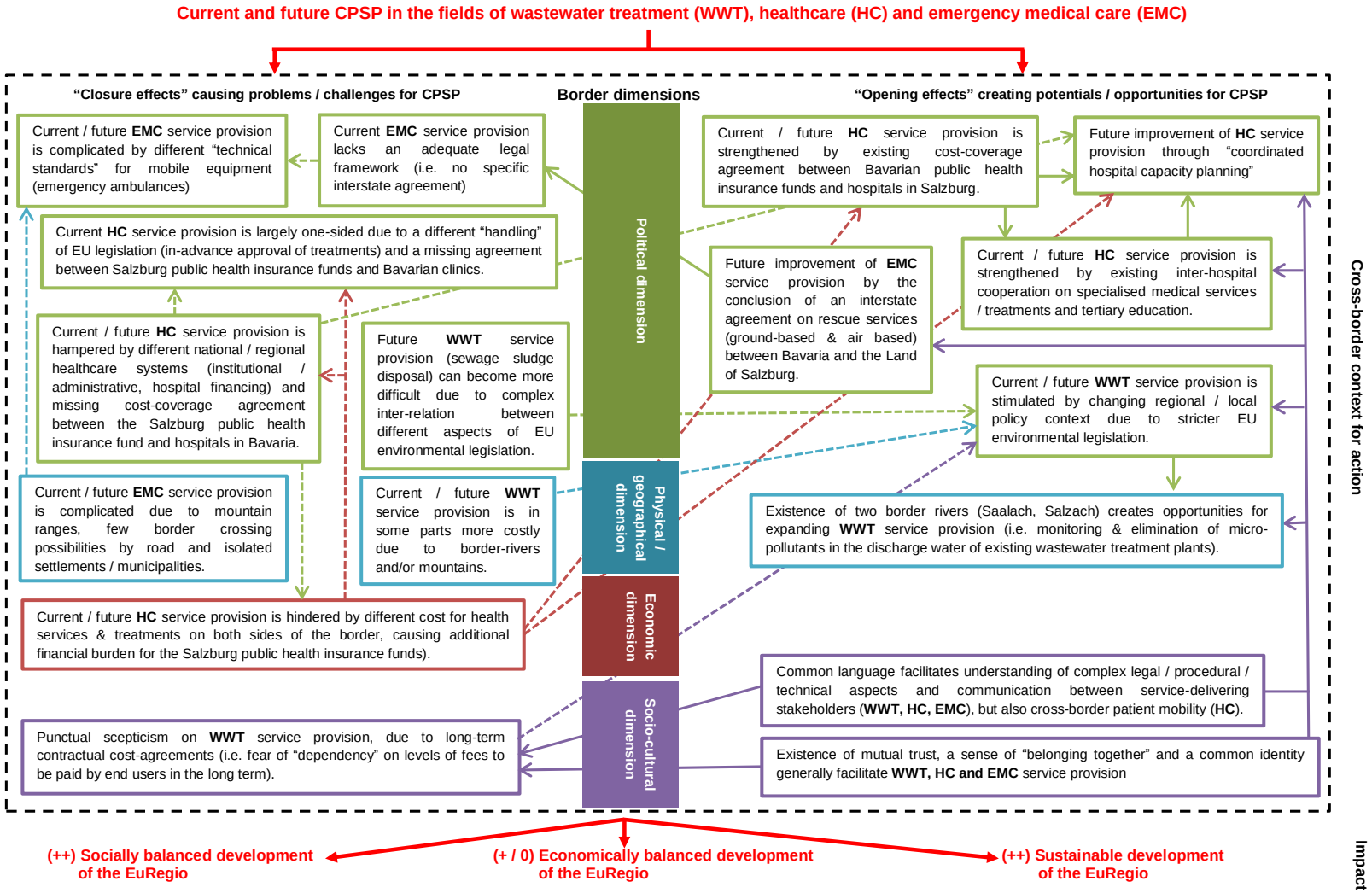
Yet, neither of these work processes process can “escape” from the general and policy-specific context in which it will take place. Stakeholders in the EuRegio therefore have to consider a variety of influencing factors that can act as incentives or hurdles for a further optimisation of CPSP.

This can be illustrated by a nexus diagram for the EuRegio (see: figure 5-1), which shows at one glance the pathway for further optimising CPSP as well as the most relevant factors that are likely to affect related policy actions. The nexus diagram shows the cross-border context for action in form of a web-like picture, because a linear presentation (e.g. by a logical framework) is barely able capturing the complexity of cross-border policy making. This context for further optimising CPSP consists of inhibiting factors (closure effects) and enhancing factors (opening effects) that emerge simultaneously from the multidimensional reality of any border (i.e. political, physical-geographical, economic, socio-cultural border dimensions). These border effects usually cause problems / potentials in the present-time and also challenges / opportunities in the future. However, their complex interplay also causes further "reinforcement effects"[243] and "alleviation effects"[244], having additional influence on a further optimisation of CPSP. Presented this way, the nexus diagram becomes a “mind-map” that can help establishing a better and shared understanding among policy-relevant actors who will prepare decision-making on future CPS.

[243] For example: Two related problems and / or challenges causing together an even stronger closure effect. Two related potentials and / or opportunities causing together an even stronger opening effect.

[244] For example: A problem or challenge reducing the opening effect of a potential or opportunity. A potential or opportunity reducing the closure effect of a problem or challenge.

Figure 5–1 Nexus diagram - development path for optimising CPSP in the EuRegio and likely impact of improvements (++ = strong; + = low; 0 = no)



6 Lessons learned, recommendations and transferability

This concluding chapter summarises the main lessons learned from the in-depth analysis of existing CPS (see: chapter 4) and the study of future perspectives for CPS (see: chapter 5) in the EuRegio. It also highlights aspects that are of interest for general policy recommendations on CPS and also help stimulating a cross-regional knowledge transfer.

Weak legal framework for CPS and low level of institutionalisation

There are not many general and/or theme-specific interstate agreements on cross-border cooperation or CPS that apply in the EuRegio. CPSP is currently taking place on grounds of a low level of institutionalisation, as specific cross-border structures or joint bodies with an own legal personality were not set up for existing CPS. Nevertheless, the analysed CPS in the EuRegio are in general working very smoothly since many years.

In case of emergency medical care though, the absence of an appropriate thematic legal framework is still creating difficulties and uncertainties for service provision at the operational level. These shortcomings can only be eliminated by a comprehensive legal frame setting, which requires that appropriate actions are initiated at a higher political level.

The multidimensional reality of borders influences CPSP very differently

The different dimensions of the common border have a variable influence on CPSP in the EuRegio. Addressing shared needs or joint development potentials emerging from the physical-geographical and economic dimensions of the border was and still is the most important reason for establishing CPS in the EuRegio.

Adverse effects associated with the political dimension of the border (esp. differences of legal systems and administrative / organisational matters) had for a long time only a limited impact on CPS, but related hurdles are stronger felt the more intense or complex CPSP is becoming (i.e. emergency medical care; sewage sludge disposal).

The socio-cultural dimension of the border generally acts as a facilitator for all CPS, mainly because the same language is spoken on both sides of the border. This “opening effect” eases inter-personal communication and also a common understanding of complex legal or technical matters associated with CPSP.

Variable implications of EU legislation for CPSP

Existing and further developing EU legislation in specific policy areas (i.e. public passenger transport, healthcare, environment / water) is substantially influencing the establishment, ongoing provision and further development of CPS. The impact EU-level legislation has on CPSP is however very different in the three analysed policy fields.

EU legislation on public local passenger transport has established a coherent set of rules, which governs the entire sector throughout the EU and also facilitate a standardised provision of cross-border services in the EuRegio.

Cross-border treatments of patients occurred in the EuRegio already in the 1970s and have further increased under the influence of a developing EU legislation in this field. However, the analysis has also shown that differences between national / regional healthcare systems lead to a different practical application of the procedures introduced by EU legislation, with the latter aspect being one of the main causes for the currently imbalanced use of cross-border healthcare services in the EuRegio.

New environmental and water-related policy goals and quality standards introduced through the nationally transposed EU legislation still motivate the setting up of new CPS as a response to stricter regional laws and policies on either side of the border (i.e. wastewater treatment, sewage sludge disposal). However, the complexity of future development needs will continue to increase as a result of the strong interaction between relevant environmental aspects (i.e. water quality, soil protection, waste management, circular economy) and related legal requirements, which may also make it more difficult to use CPS as a joint solution.

CPS organised and delivered as "shared service centre" or "network" model

The analysed CPS in the EuRegio are most often organised and delivered on ground of a "shared service centre model" (i.e. wastewater treatment, sewage sludge disposal, healthcare, partly public local transport), but sometimes also on ground of a "networking model" (i.e. emergency medical care, partly public local transport).

Nevertheless, the analysis of existing and future CPS clearly shows that a further formalisation of CPS is needed when the complexity of tasks is growing (sewage sludge disposal) or when cooperation intensity is wished to further increase (i.e. cross-border integration of tariff systems for public local transport).

An integrated model is currently applied only for one CPS on public local transport (i.e. EuRegio information maps), but the planned establishment of an "EuRegio transport and tariff association" can involve a much more substantial step towards integration.

CPSP benefits from existing regional and/or cross-border spatial planning

The case of the EuRegio illustrates well how cross-border spatial planning activities and/or sector-specific cross-border planning activities can provide valuable orientation guideline for a targeted development of CPS.

This is particularly evident in case of the development of an integrated cross-border public local transport system for the cross-border "core region Salzburg". Relevant measures are not only included in the cross-border spatial development concept elaborated for the the "core region Salzburg", but also within the regional transport plan of the Land of Salzburg.

However, the existing planning documents are not yet intensively considing CPS in other policy fields that are equally relevant for territorial development (i.e. healthcare and emergency medical care or wastewater treatment). It is therefore recommended that case

study findings on these CPS are taken into account when existing territorial or sector-policy planning documents are updated or new ones are elaborated in the EuRegio.

CPS with a pronounced infrastructural and technical component can be challenging

The analysed CPS in the fields of wastewater treatment and public local transport are good examples for joint services with a strong infrastructural and technical component. These services often require that very long-term and also binding decisions have to be taken (20-30 years or more), for example on the construction and ongoing maintenance of connecting infrastructures or the contractual conditions for a border-crossing treatment of transfered sewage.

The CPS in both fields also involve substantial cost and/or generate revenues that have to be agreed and shared on a cooperative basis. These aspects affect not only the direct service operators or contracted service providers (i.e. cost for infrastructure and equipment; maintenance and staff cost; distribution of revenues from transport fares), but also the final users of services (i.e. levels of fees for sewage treatment; ticket prices).

Due to the complexity of CPS involving physical infrastructures and other expensive technical equipment, it should therefore always be considered that the time needed for consensus building during their set-up phase can often be quite substantial.

Type and number of actors involved in CPS is varying greatly

This observation seems at first glance relatively simple. However, both aspects are important influence factors for the set-up phase and the subsequent daily operation of CPS as well as for any further development of CPSP. This is illustrated by the CPS examined in the EuRegio, which show marked differences as regards the legal status and the overall number of organisations involved in a provision of CPS.

The CPS on wastewater treatment and on sewage sludge disposal are examples for services that involve only a few core actors. Once a consensus on common interests is reached and basic infrastructural or logistical conditions are established, the daily operation of these CPS is relatively “easy” both within a low formalisation framework (i.e. wastewater treatment) or in a more formalised context (i.e. sewage sludge disposal).

The other analysed CPS all involve a broad range of actors that have very different legal statuses and operational capacities (i.e. healthcare, emergency medical care, public local transport). This diversity makes it not only more difficult to establish a CPS (i.e. consensus on very different interests), but also requires a substantial coordination effort for delivering the CPS especially if persisting systems differences play an important role in the ongoing operation of the service (i.e. emergency medical care, healthcare).

For the latter cases, it can be observed that practical problems linked to such differences are for the moment still accepted by the concerned stakeholders in the EuRegio. In the case of public local transport, however, it appears that the diverse stakeholders are making a joint effort for overcoming such differences in order to achieve a more integrated service provision within the EuRegio.

Potentials for a transfer of CPS approaches

Potentials for a transfer of CPS approaches indeed exist, but context always matters when it comes to "exporting" a described solution that is adopted in the EuRegio. The in-depth analysis of the "operational context" for CPSP shows that the interplay of different influencing factors is very complex and also variable in the three examined policy fields (i.e. administrative and legal matters, required production base for service provision, types and scope of actors involved, unforeseeable external factors etc.). These aspects are therefore strongly conditioning the way the examined CPS had been developed and organised and how they are operated on a daily basis. And finally, these aspects also strongly influence how relevant the developed CPS approaches can be for other cross-border areas.

Due to the large number of CPS examined in this case study, only two general conclusions are drawn with regard to transferability.

Transferability potentials are high in case of cross-border regions located at an internal or external EU border that concerns the same countries as in a given case study area. In case of the EuRegio, it is therefore recommended to share its practical experience on organisational approaches and delivery modes for CPS with other cross-border areas at the German-Austrian border, as especially the systems-related context factors are largely similar (i.e. governance structures, legal context, administrative procedures). Evidence for benefits associated with such a "border-internal knowledge transfer" can also be found within the EuRegio in case of the analysed CPS on sewage sludge disposal.

Transferability potentials tend to be more reduced in case of cross-border regions located at internal or external EU borders between Member States (or third countries) that are different from those covered by a given case study area. In case of the EuRegio, however, many CPS can be a valuable source of inspiration for other rural or mountainous and also urbanised cross-border areas. This is because current existing CPS are most often based upon pragmatic approaches with low levels of formalisation / institutionalisation, which offer solutions to shared needs / development opportunities and generate at the same time also benefits for all parties involved (e.g. wastewater treatment, quality improvement of cross-border public local transport services).

References

Literature and other documentary sources

Allinger H (2016) *Cross Border Healthcare in Europa – Möglichkeiten und Grenzen einer wohlfahrtssteigernden Zusammenarbeit im Gesundheitswesen.* INWISO - Institut für empirische Wirtschafts-und Sozialforschung. Power Point Presentation at the conference „Gesundheit für alle“ - „Die Chancen grenzüberschreitender regionaler Zusammenarbeit in der Gesundheitsförderung und Gesundheitsversorgung“. Institut der Regionen Europas (IRE), 24. Februar 2016, Konferenzzentrum Hallwang bei Salzburg, Österreich.

Amann A, Zessner M and Zoboli O (2017) *Klärschlamm und Phosphorrückgewinnung in Österreich.* Technische Universität Wien, Institut für Wassergüte und Ressourcenmanagement. 22. Dreiländertreffen, 15.-17. Oktober 2017.

Alm-Erlebnis-Bus (2018) Online information on cross-border bus line 847. Available at: http://www.rvo-bus.de/oberbayernbus/view/freizeittipps/wanderbusse/wanderbus-alm-erlebnis-bus.shtml ; https://www.almerlebnisbus.com/ (accessed 26. April 2018)

AOK Bayern (2014) Rahmenbedingungen für grenzüberschreitende Gesundheitsversorgung. Igls, 01. Juli 2014. (Power Point presentation by Alexander Meindl, AOK Bayern - Die Gesundheitskasse, Europa-Internationales).

BASt - Bundesanstalt für Straßenwesen (2006) Hindernisse für grenzüberschreitende Rettungseinsätze. Berichte der Bundesanstalt für Straßenwesen, Mensch und Sicherheit, Heft M 183, Bergisch Gladbach, November 2006.

Koordinierungsdokument Bayern – Österreich (2009) *Umsetzung der Europäischen Wasserrahmenrichtlinie (Richtlinie 2000/60/EG). Internationale Flussgebietseinheit Donau.* Bearbeitungsgebiet Donau. Koordinierungsdokument Bayern – Österreich. Grenzüberschreitende Abstimmung bei der Erstellung der Bewirtschaftungspläne. Stand Oktober 2009.

Bayerische Gemeindezeitung (2017) EuRegio Dialog 2017: Kliniken als führendes Gesundheitsunternehmen der Region. Available at: http://www.gemeindezeitung.de/homepage/index.php/inhalt/artikel/aus-den-kommunen/1289-gz-18-2017-euregio-dialog-2017-kliniken-als-fuehrendes-gesundheitsunternehmen-der-region (accessed 14. May 2018)

Bayerisches Landesamt für Statistik (2013) *Öffentliche Wasserversorgung und Abwasserentsorgung in Bayern 2013.* Statistische Berichte, Kennziffer Q I 1 - 3j 2013.

Bayerisches Landesamt für Umwelt (2010) *Abwasserentsorgung in Bayern – Schutz von Fließgewässern und Seen.* November 2010.

Bayerisches Landesamt für Umwelt (2011) *Klärschlammentsorgung in Bayern - Planungshilfe für Kommunen*.

Bayerisches Landesamt für Umwelt (2016) *UmweltWissen: Schadstoffe. Spurenstoffe im Wasser.* September 2016, 1. Auflage.

Bayerisches Landesamt für Umwelt (2018a) Klärschlamm. Available at: https://www.lfu.bayern.de/wasser/abwasser_klaerschlamm/index.htm (accessed 23. March 2018)

Bayerisches Landesamt für Umwelt (2018b) Klärschlamm ; Thermische Behandlung des Klärschlamms. Available at: https://www.lfu.bayern.de/abfall/klaerschlamm/index.htm (accessed 23. March 2018)

Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2013) Pressemeldung 23.10.2013. Deutsche Notfallpatienten in Österreich. Grenzüberschreitende Patientenversorgung im Rettungsdienst. . Available at: https://www.kvberchtesgaden.brk.de/brk-bgl/aktuelles/8503-23-10-2013-Deutsche-Notfallpatienten-in-%C3%96sterreich.html (accessed 14. May 2018)

Bayerisches Rotes Kreuz (2018) Über uns. Available at: https://www.brk.de/rotes-kreuz/ueber-uns/ (accessed 14. May 2018)

Bayerisches Rotes Kreuz – Kreisverband Berchtesgadener Land (2018) Pressemeldung 06.02.2018. Auch das Bayerische Rotes Kreuz muss für Fahrten auf österreichischen Autobahnen ein Pickerl kaufen. Available at: https://www.kvberchtesgaden.brk.de/brk-bgl/aktuelles/10712-06-02-2018-auch-das-bayerische-rotes-kreuz-muss-fuer-fahrten-auf-oesterreichischen-autobahnen-ein-pickerl-kaufen.html (accessed 14. May 2018)

Bayerische Staatskanzlei (2018a) *Bayerisches Krankenhausgesetz (BayKrG)*, in der Fassung der Bekanntmachung vom 28. März 2007 (GVBl. S. 288, BayRS 2126-8-G), zuletzt geändert durch § 2 des Gesetzes vom 13. Dezember 2016 (GVBl. S. 362). Available at: http://www.gesetze-bayern.de/Content/Document/BayKrG (accessed 14. May 2018)

Bayerische Staatskanzlei (2018b) *Bayerisches Rettungsdienstgesetz (BayRDG) vom 22. Juli 2008* (GVBl. S. 429), BayRS 215-5-1-I. Available at: http://www.gesetze-bayern.de/Content/Document/BayRDG (accessed 14. May 2018)

Bayerisches Staatsministerium für Umwelt und Verbraucherschutz (2017) *Gewässer in Bayern - auf dem Weg zum guten Zustand. Bewirtschaftungspläne und Maßnahmenprogramme für den Zeitraum 2016 bis 2021.* München, 2017.

Berchtesgadener Anzeiger (2012) Barmsteiner Abwasser nach Hallein. 28.09.2012. Available at: https://www.berchtesgadener-anzeiger.de/startseite_artikel,-barmsteiner-abwasser-nach-hallein-_arid,16562.html (accessed 23. March 2018)

Berchtesgadener Anzeiger (2018) Einiges zu klären beim Klärwerk – Abwasser nach Österreich? 13.04.2018. Available at: https://www.berchtesgadener-anzeiger.de/startseite_artikel,-einiges-zu-klaeren-beim-klaerwerk-abwasser-nach-Oesterreich-_arid,403436.html (accessed 23. March 2018)

Berchtesgadener Land Bahn (2018a) Liniennetzübersicht. Available at: https://www.blb.info/2_liniennetzplan.asp (accessed 26. April 2018)

Berchtesgadener Land Bahn (2018b) Tickets & Tarifbestimmungen. Available at: https://www.blb.info/3_tickets.asp (accessed 26. April 2018)

Berchtesgadener Land Bahn / Regionalverkehr Oberbayern (2014) Mit Bahn und Bus von Salzburg bis ins Berchtesgadener Land und umgekehrt. Presseinformation mit der Bitte um Veröffentlichung, 17. April 2014.

BGLand24.de (2015a) Klärwerk Bayerisch Gmain: Gemeinde will 3,6 Millionen Euro investieren. 01.12.15. Available at: https://www.bgland24.de/bgland/region-bad-reichenhall/bayerisch-gmain-ort65299/gemeinderat-bayerisch-gmain-stimmt-planung-klaerwerk-sanierung-bgl24-5917837.html (accessed 23. March 2018)

BGLand24.de (2015b) Bauausschuss der Gemeinde Saaldorf-Surheim - Neue Pläne für die Kläranlage. 15.04.15. Available at: https://www.bgland24.de/bgland/rupertiwinkel/saaldorf-surheim-ort63093/saaldorf-surheim-neue-bauplaene-klaeranlage-4910574.html (accessed 23. March 2018)

BGLand24.de (2018) Gemeinderat trifft Grundsatzbeschluss zum Abwasser - Kläranlage Piding: So geht es in Zukunft weiter. 08.05.18. Available at: https://www.bgland24.de/bgland/rupertiwinkel/piding-ort44897/piding-erweiterung-oder-nein-gemeinderat-piding-trifft-grundsatzbeschluss-klaeranlage-9850927.html (accessed 23. March 2018)

BGL-WIKI (2018) Kläranlage Ainring. Available at: https://bgl.wiki/bgl/Kl%C3%A4ranlage_Ainring (accessed 23. March 2018)

BMLFUW - Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (2016) *Kommunales Abwasser - Österreichischer Bericht 2016*. Wien, 30. 06. 2016.

BMU - Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (2018) Themen - Klärschlamm. Available at: http://www.bmu.de/themen/wasser-abfall-boden/abfallwirtschaft/abfallarten-abfallstroeme/klaerschlamm/ (accessed 23. March 2018)

Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (2018) *Gesetz zu dem Abkommen vom 23. Dezember 1988 zwischen der Bundesrepublik Deutschland und der Republik Österreich über die gegenseitige Hilfeleistung bei Katastrophen oder schweren Unglücksfällen vom 20. März 1992* (Fundstelle: Bundesgesetzblatt Teil II, 1992, Nr. 9 vom 28. März 1992, S. 206 – 209).

Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2018a) Öffentliches Gesundheitsportal Österreich - Das Gesundheitswesen im Überblick. Available at: https://www.gesundheit.gv.at/gesundheitssystem/gesundheitswesen/gesundheitssystem (accessed 14. May 2018)

Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2018b) Kontaktstelle Patientenmobilität, Patientenrechte, FAQ – Behandlung im EU-Ausland. Available at: https://www.gesundheit.gv.at/service/patientenmobilitaet/patientenrechte/faq-behandlung-eu-ausland (accessed 14. May 2018)

Bundesministerium für Verkehr, Innovation und Technologie (2018) Verkehrsverbünde in Österreich. Available at: https://www.bmvit.gv.at/verkehr/nahverkehr/verbuende/oesterreich.html (accessed 26. April 2018)

Busse R and Blümel M (2014) *Germany - Health system review.* In: Health Systems in Transition, Vol. 16 No. 2 / 2014. World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

CoR – Committee of the Regions (2012) *EGTC Monitoring Report 2011,* Brussels, 2012.

CoR – Committee of the Regions (2014) *EGTC Monitoring Report 2013. Towards the New Cohesion Policy,* February 2014.

CoR – Committee of the Regions (2017) *EGTC monitoring report 2016 and impacts of Schengen area crisis on the work of EGTCs*, Brussels, 2017.

DB Oberbayernbus (2018) Mozart-Express. Available at: http://www.rvo-bus.de/oberbayernbus/view/freizeittipps/ausflugsbusse/mozartexpress.shtml (accessed 26. April 2018)

EEA – European Environment Agency (2016) *European water policies and human health. Combining reported environmental information*, EEA Report, No 32/2016.

ERB - EuRegioBahnen (2015a) Mobilität in Salzburg und Umgebung – Ergebnisse der Mobilitätserhebung 2012. Fact Sheet „Mobilität im Großraum Salzburg“. Projekt EuRegioBahnen Salzburg – Bayern – Oberösterreich, 5. Oktober 2015.

ERB - EuRegioBahnen (2015b) Mobilität in Salzburg und Umgebung – Ergebnisse der Mobilitätserhebung 2012. Fact Sheet „Mobilität in der Stadt Salzburg 2004 bis 2012“. Projekt EuRegioBahnen Salzburg – Bayern – Oberösterreich, 5. Oktober 2015.

ESPON (2012a) *GEOSPECS – European Perspective on Specific Types of Territories*, Applied Research 2013/1/12, Final Scientific Report (Version 20/12/2012).

ESPON (2012b) *ULYSSES - Using applied research results from ESPON as a yardstick for cross-border spatial development planning*, Targeted Analysis 2013/2/10. Scientific Report for the Final Report. Data Fact Sheets. Version 30/07/2012. Data Fact Sheet 3 “EuRegio Salzburg – Berchtesgadener Land – Traunstein” (pp. 18-28)

EuRegio Salzburg-Berchtesgadener Land-Traunstein (1997) Leitvorstellungen der EuRegio Salzburg-Berchtesgadener Land-Traunstein im Einzelnen. Beschlossen vom EuRegio-Rat am 20. November 1997 in Traunstein.

EuRegio Salzburg-Berchtesgadener Land-Traunstein (2013) Abwasserkooperation in der EuRegio. In: EuRegio Aktuell, Ausgabe Nr. 02/2013.

EuRegio Salzburg-Berchtesgadener Land-Traunstein (2016) Standort Europa-Region Salzburg – Berchtesgadener Land – Traunstein. Stand Dezember 2016.

EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017a) EuRegio Dialog 2017: Kliniken als führendes Gesundheitsunternehmen der Region. 15.09.2017. Available at: http://www.euregio-salzburg.eu/EuRegio_Dialog_2017_Kliniken_als_fuehrendes_Gesundheitsunternehmen_der_Region (accessed 14. May 2018)

EuRegio Salzburg-Berchtesgadener Land-Traunstein (2017b) On-line database of supported Interreg projects. Available at: http://euregio.riskommunal.net/system/web/sonderseite.aspx?menuonr=219792762&detailonr=219792762 (accessed 13. October May 2017)

EuRegio Salzburg-Berchtesgadener Land-Traunstein (2018) Karte "Mit Bus und Bahn die EuRegio erfahren". Available at: https://euregio.riskommunal.net/Projekte/Themen/Verkehr/Karte_Mit_Bus_und_Bahn_die_EuRegio_erfahren_ (accessed 26. April 2018)

European Commission (2016) *Pollutants from the EU Watch List: a review of their occurrence and water-treatment options.* In: Science for Environment Policy, 07 October 2016, Issue 473.

European Commisssion (2018) Environment – Water. Available at: http://ec.europa.eu/environment/water/index_en.htm (accessed 23. March 2018)

European Commission DG REGIO (2004) *Towards a new Community legal instrument facilitating public law based trans-European co-operation among territorial authorities in the European Union*, Synthesis Report, March 2004.

European Commission DG REGIO (2017) *European Cross-Border Cooperation on Health: Theory and Practice*, May 2017.

European Commission DG SANTE (2016) *Study on better cross-border Cooperation for high-cost Capital investments in health*, Final Report, November 2016

European Commission DG SANTE (2018) *Study on Cross-Border Cooperation - Capitalising on existing initiatives for cooperation in cross-border regions* (Cross-border.Care), Final Report, March 2018.

Fraunhofer-UMSICHT (2018) Vierte Reinigungsstufe: Stand und Ausblick. Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT. Available at: https://www.initiative-mikroplastik.de/index.php/themen/4-reinigungsstufe (accessed 23. March 2018)

Friesenecker R (no date mentioned) Vertrag zwischen der Republik Österreich einerseits und der Bundesrepublik Deutschland und der Europäischen Wirtschaftsgemeinschaft andererseits über die wasserwirtschaftliche Zusammenarbeit im Einzugsgebiet der Donau (Regensburger Vertrag). In Kraft getreten am 1. März 1991. Land Oberösterreich, Direktion Umwelt und Wasserwirtschaft - Abteilung Anlagen-, Umwelt- und Wasserrecht.

Fuchs M, Hubik F, Riedl M and Slezak M (2013) Die österreichischen Spitäler - datenjournalistischer Überblick. Available at: http://spitalsdaten.blogspot.com/ (accessed 14. May 2018)

Gampert-Zeisberger E (2016) Gesundheitsziele für Salzburg. Salzburger Gebietskrankenkasse, Leiterin Abteilung Gesundheit. Power Point Presentation at the conference „Gesundheit für alle“ - „Die Chancen grenzüberschreitender regionaler Zusammenarbeit in der Gesundheitsförderung und Gesundheitsversorgung“. Institut der Regionen Europas (IRE), 24. Februar 2016, Konferenzzentrum Hallwang bei Salzburg, Österreich.

Gemeinde Bayerisch Gmain (2013) Veröffentlichung Tagesordnungspunkte, öffentliche Gemeinderatssitzung vom 25.02.2013. Available at: http://www.bayerisch.gmain.de/medien/top-veroeffentlichung-internet-22042013.pdf (accessed 23. March 2018)

Gemeinde Bayerisch Gmain (2016) Veröffentlichung Tagesordnungspunkte, öffentliche Gemeinderatssitzung vom 11.07.2016. Available at:

http://www.bayerisch.gmain.de/medien/top-veroeffentlichung-internet-11072016.pdf (accessed 23. March 2018)

Gemeinde Bayerisch Gmain (2018) Wasser und Abwasser. Available at: http://www.bayerisch.gmain.de/de/wasser-und-abwasser/ (accessed 23. March 2018)

Gemeinde Piding (2018) Klärwerk - Abwasserzweckverband Saalachtal (AZV). Available at: http://www.gemeinde-piding.de/Klaerwerk/ (accessed 23. March 2018)

Gemeinde Saaldorf-Surheim (2018) Niederschrift über die Sitzung des Gemeinderates der Gemeinde Saaldorf-Surheim. Öffentliche Sitzung, 21.03.2018. Available at: http://www.saaldorf-surheim.de/uploads/media/GR_Protokoll_18-03-21-SOOEF.pdf (accessed 26. April 2018)

Gemeinnützige Salzburger Landeskliniken Betriebsgesellschaft (2018) SALK - Salzburger Landeskliniken. Available at: http://www.salk.at/79.html (accessed 14. May 2018)

Gfrerer J (2014) EuRegio-Bahnen Salzburg – Bayern – Oberösterreich. Studien zur Wirtschaftlichkeit und technischen Machbarkeit von sechs neuen Bahnstrecken. In: Regionale Schienen – Fachzeitschrift, 2/2014.

Heimatzeitung (2014) Abwasser, das aussieht "wie Kakao". 24.06.2014. Available at: http://www.heimatzeitung.de/lokales/berchtesgadener_land/1340778_Abwasser-das-aussieht-wie-Kakao.html (accessed 23. March 2018)

Heimatzeitung (2015) Züge fahren wieder nach Salzburg - Doppelte Kontrollen geplant. 07.10.2015. Available at: http://www.heimatzeitung.de/startseite/aufmacher/1830528_Zuege-fahren-wieder-nach-Salzburg-Vorerst-ohne-Passagiere-zurueck.html (accessed 26. April 2018)

Heimatzeitung (2016) Bayerisch Gmain - Neues Klärwerk prägt den Investitionsplan. 08.03.2016. Available at: http://www.heimatzeitung.de/lokales/berchtesgadener_land/1989832_Neues-Klaerwerk-praegt-den-Investitionsplan.html (accessed 23. March 2018)

Heimatzeitung (2018a) Abwasserbeseitigung kommt die Gemeinde teuer. 26.03.2018. Available at: http://www.heimatzeitung.de/lokales/berchtesgadener_land/2887227_Abwasserbeseitigung-kommt-die-Gemeinde-teuer.html (accessed 23. April 2018)

Heimatzeitung (2018b) Anger - Ausbaukonzept der Kläranlage vorgestellt. 11.06.2018. Available at: https://www.heimatzeitung.de/lokales/berchtesgadener_land/2972702_Ausbaukonzept-der-Klaeranlage-vorgestellt.html (accessed 20. June 2018)

Hofmarcher M and Quentin W (2013) Austria - Health system review. Health Systems in Transition, Vol. 15 No. 7 / 2013. World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

Hogger Reisen (2018) Online information on the bus company Hogger GmbH. Available at: https://www.hogger-reisen.de/ueber-uns/geschichte/ (accessed 26. April 2018)

infomediaworx.wordpress (2017) Funkstille zwischen Salzburg und Bayern – trotz Digitalfunk. Länder nutzen verschiedene Verschlüsselung, Behörden blockieren. 29. Dezember 2017. Available at: https://infomediaworx.wordpress.com/2017/12/29/funkstille-zwischen-salzburg-und-bayern-trotz-digitalfunk/ (accessed 14. May 2018)

Integrierte Leitstelle Traunstein (2018) Aufgaben. Available at: https://www.ils-ts.de/aufgaben/ (accessed 14. May 2018)

IRE - Institut der Regionen Europas (2016) Pressespiegel. IRE Fachkonferenz „Gesundheit für alle“ - „Die Chancen grenzüberschreitender regionaler Zusammenarbeit in der Gesundheitsförderung und Gesundheitsversorgung“. 24. Februar 2016, Konferenzzentrum Hallwang bei Salzburg, Österreich.

Kommunalnet (2013) Kooperation - Grenzenlose Abwasserbeseitigung in Unken. 15.02.2013. Available at: https://www.kommunalnet.at/news/einzelansicht/grenzenlose-abwasserbeseitigung-in-unken/news/detail.html (accessed 23. March 2018)

Langenohl T (2017) Umsetzung der Klärschlammverordnung aus kommunaler Sicht. Wasser Berlin International, 29.03.2017. Available at: https://www.wasser-berlin.de/media/global/global_image/global_apps/global_edb/global_edb_upload_2017/global_edb_events_wasser_1/edb_454738.pdf (accessed 23. March 2018)

Land Salzburg (2011) Kurioses über Grenzen hinweg - 6.000 Pendler queren täglich die Grenze zwischen Salzburg und Bayern. Salzburger Landeskorrespondenz, 02.02.2011. Available at: https://service.salzburg.gv.at/lkorrj/Index?cmd=detail_ind&nachrid=46431 (accessed 23. March 2018)

Land Salzburg (2016a) salzburg.mobil 2025 - Landesmobilitätskonzept Salzburg 2016-2025. Expertenbericht Teil II. Zielsetzung und Strategie, Maßnahmen / Kostendimensionen, Monitoringkonzept. Regierungsantrag.

Land Salzburg (2016b) salzburg.mobil 2025 – Salzburger Landesmobilitätskonzept 2016-2025. Land Salzburg, Abteilung 6 – Infrastruktur und Verkehr, Juli 2016.

Land Salzburg (2016c) Räumliche Strukturanalyse des Landes Salzburg 2014/15. Salzburg, Jänner 2016.

Land Salzburg (2018a) Die Überwachung der Kläranlagen und Abwassereinleitungen im Land Salzburg - Kommunale Kläranlagen über 1000 EW. (1) Kommunale Abwasserreinigung ARA Siggerwiesen; (2) Kommunale Abwasserreinigung ARA Unken. Available at: https://www.salzburg.gv.at/themen/wasser/abwasser-hauptseite/ara (accessed 23. March 2018)

Land Salzburg (2018b) Krankenanstalten im Land Salzburg. Available at: https://www.salzburg.gv.at/gesundheit_/Seiten/krankenanstalten-2.aspx (accessed 14. May 2018)

Land Salzburg / Regio Berchtesgadener Land – Traunstein e.V. (2013): Masterplan - Kooperatives Raumkonzept für die Kernregion Salzburg. Beschlossen von der Salzburger Landesregierung am 12.11.2013, vom Kreistag des Landkreises Berchtesgadener Land am 28.10.2011 und vom Kreisausschuss des Landkreises Traunstein am 24.10.2012. Salzburg, November 2013.

Landkreis Traunstein (2018) Gesundheitswesen. Available at: https://www.traunstein.com/wTraunstein/verwaltung/einrichtungen/gesundheitswesen.php (accessed 14. May 2018)

Landratsamt Berchtesgadener Land (2018) Häufig gestellte Fragen: Warum gibt es noch keinen Tarifverbund im Berchtesgadener Land? Available at: https://www.lra-bgl.de/lw/sicherheit-verkehr/mobilitaet/bus/ (accessed 26. April 2018).

Lüdecke R and Allinger H (2005) *Grenzüberschreitende Leistungen im Gesundheitswesen.* Band 1 – Theoretische Grundlagen. Band 2 – Die ambulante ärztliche Versorgung. Band 3 – Der Krankenhausbereich. Band 4 – Das Rettungswesen. Band 5 – Zusammenfassung. Passau, 2005.

Marmora T and Wendt C (2012) *Conceptual frameworks for comparing healthcare politics and policy*. In: Health Policy, no. 107 (2012), pp 11-20

MICROPOLLUTANTS.COM (2018) Micropollutants in our wastewater. Available at: http://micropollutants.com/ (accessed 23. March 2018)

Ministerium für Umwelt, Energie, Ernährung und Forsten Rheinland Pfalz (2017) Start für grenzüberschreitendes Kooperationsprojekt EmiSûre: Gemeinsam Mikroschadstoffe in Gewässern reduzieren. Pressemeldung 30.01.2017. Available at: https://mueef.rlp.de/de/pressemeldungen/detail/news/detail/News/start-fuer-grenzueberschreitendes-kooperationsprojekt-emisure-gemeinsam-mikroschadstoffe-in-gewaessern/ (accessed 23. March 2018)

Mozart-Express (2018) Online information on cross-border bus line 9535. Available at: https://www.almerlebnisbus.com/ ; http://www.rvo-bus.de/oberbayernbus/view/freizeittipps/wanderbusse/wanderbus-alm-erlebnis-bus.shtml (accessed 26. April 2018)

Niemann J and Koch H (2016) *Gemeinsam erfolgreich - Verkehrsverbund EuRegio Salzburg Berchtesgadener Land Traunstein: Analyse Ist-Zustand und Rahmenbedingungen*. Salzburg, 14.6.2016.

Niedobitek M (2001) *Das Recht der grenzüberschreitenden Verträge: Bund, Länder und Gemeinden als Träger.* Tübingen, 2001.

ÖBB - Infrastruktur (no date mentioned) Bahnhofsinfrastruktur im Zentralraum Salzburg. S-Bahn und Attrakivierung Hauptbahnhof. Österreichische Bundesbahnen ÖBB - Infrastruktur AG. Presentation by DI Thomas Wörndl.

ÖBB – Postbus (2018) Online information on cross-border bus line 112. Available at: https://www.postbus.at/de/Fahrplanauskunft/Fahrplandownload/index.jsp?search=true&land=SALZBURG&fahrplanabfrage=112 (accessed 26. April 2018)

ÖROK – Österreichische Raumordnungskonferenz (2005) *ÖROK 2001 in der Praxis,* good practice Sammlung: 7.3 Euregio Salzburg-Berchtesgadener Land-Traunstein. Raumentwicklung in einem grenzüberschreitenden Ballungsraum. Stand, April 2005.

Österrechisches Rotes Kreuz Salzburg (2018) Landesleitstelle Salzburg. (http://www.roteskreuz.at/sbg/rettungsdienst/landesleitstelle/), Rettungsdienst: Hilfe im Notfall (http://www.roteskreuz.at/sbg/rettungsdienst/im-notfall/) (accessed 14. May 2018)

Passauer Neue Presse (2016) Bayerisch Gmain - Neues Klärwerk prägt den Investitionsplan. 08.03.2016. Available at: http://www.pnp.de/lokales/berchtesgadener_land/1989832_Neues-Klaerwerk-praegt-den-Investitionsplan.html (accessed 23. March 2018)

Rechnungshof Österreich (1974) *Wahrnehmungsbericht des Rechnungshofes über den Reinhalteverband Tennengau Nord.* Rechnungshof Reihe Salzburg 1994/3 (Zl 01000/258-Pr/6/94). Wien 1994.

Rechnungshof Österreich (2010) *Bericht des Rechnungshofes - Entsorgungssituation im Großraum Salzburg.* Wien, Dezember 2010.

Reinhalteverband Großraum Salzburg (2016a) Weitere grenzüberschreitende Zusammenarbeit bei der Abwasserentsorgung - Bayerisch Gmain liefert Klärschlamm nach Siggerwiesen. 15. Juli 2016. Available at: http://www.umweltschutzanlagen.at/de/aktuelles/detail/artikel/weitere-grenzueberschreitende-zusammenarbeit-bei-der-abwasserentsorgung-bayerisch-gmain-liefert-kl.html (accessed 23. March 2018)

Reinhalteverband Großraum Salzburg (2016b) Umweltschutzanlagen Siggerwiesen - Reinhalteverband Großraum Salzburg. Tätigkeitsbericht. Zeitraum: Jan - Dez 2016. Available at: http://www.umweltschutzanlagen.at/de/rhv/geschaeftsberichte.html (accessed 23. March 2018)

Reinhalteverband Großraum Salzburg (2018) Informationsfolder. Available at: http://www.umweltschutzanlagen.at/de/rhv/informationsfolder.html (accessed 23. March 2018)

Reinhalteverband Tennengau Nord (2018) Reinhalteverband Tennengau Nord - Damit unser Wasser nicht baden geht! (Information on the official website). Available at: http://www.rhv-tn.at/ (accessed 23. March 2018)

Reinhalteverband Pinzgauer Saalachtal (2018) Information on the official website. Available at: http://www.rhv-saalfelden.org/ (accessed 23. March 2018)

Republik Österreich, Bundesministerium für Inneres (2018) Multi- und bilaterale Abkommen im Bereich des Zivilschutzes. BMI-Bundesministerium für Inneres, Generaldirektion für die öffentliche Sicherheit, Abteilung II/4, Zivilschutz, Krisen- und Katastrophenschutzmanagement.

Resch H (2016) Paracelsus Medizinische Privatuniversität: Benefits durch internationale Kooperationen. Power Point Presentation at the conference „Gesundheit für alle“ - „Die Chancen grenzüberschreitender regionaler Zusammenarbeit in der Gesundheitsförderung und Gesundheitsversorgung“. Institut der Regionen Europas (IRE), 24. Februar 2016, Konferenzzentrum Hallwang bei Salzburg, Österreich.

RIS - Rechtsinformationssystem des Bundes (2018) Gesetz vom 8. Juli 1981 über das örtliche Hilfs- und Rettungswesen im Lande Salzburg (Salzburger Rettungsgesetz), StF: LGBl Nr 78/1981, in der Fassung von 2017 LGBl Nr 27/2017 (Blg LT 15. GP: RV 160, AB 203, jeweils 5. Sess).

Salzburg24 (2014) Salzburger Grenzfall: Warum das Abwasser auf Bayern in Unken wieder sauber wird. 12. Februar 2014. Available at: http://www.salzburg24.at/salzburger-grenzfall-warum-das-abwasser-auf-bayern-in-unken-wieder-sauber-wird/3859271 (accessed 23. March 2018)

Salzburg24 (2018) Vignettenpflicht für Einsatzfahrzeuge: Auch Bayerisches Rotes Kreuz ersucht um Aufhebung. 6. Februar 2018. Available at: http://www.salzburg24.at/vignettenpflicht-fuer-einsatzfahrzeuge-auch-bayerisches-rotes-kreuz-ersucht-um-aufhebung/5196338 (accessed 14. May 2018)

SalzburgWIKI (2018a) Online information on the cross-border bus lines 24, 180, 260, 840 and on the Bavarian bus company Hogger. Available at: https://www.sn.at/wiki/Buslinie_24 ; https://www.sn.at/wiki/Buslinie_180 ; https://www.sn.at/wiki/Buslinie_260 ; https://www.sn.at/wiki/Buslinie_840; https://www.sn.at/wiki/Busunternehmen_Hogger (accessed 26. April 2018)

SalzburgWIKI (2018b) Rotes Kreuz Salzburg. Available at: https://www.sn.at/wiki/Rotes_Kreuz_Salzburg (accessed 14. May 2018)

SalzburgWIKI (2018c) Salzburger Gebietskrankenkasse. Available at: https://www.sn.at/wiki/Salzburger_Gebietskrankenkasse (accessed 14. May 2018)

Salzburger Nachrichten (2013) Pinzgau importiert Abwasser. 12. Februar 2013.

(accessed 23. March 2018)

Salzburger Nachrichten (2016) Die Salzburger S-Bahn braucht neuen Schwung. 16. August 2016. Available at: https://www.sn.at/salzburg/politik/die-salzburger-s-bahn-braucht-neuen-schwung-1156951 (accessed 26. April 2018)

Salzburger Verkehrsverbund (2016) *Bericht „Verkehrsverbund EuRegio Salzburg Berchtesgadener Land Traunstein: Analyse Ist-Zustand und Rahmenbedingungen“.* Erstellt im Auftrag der Salzburger Verkehrsverbund GmbH. 28. Juni 2016.

Salzburg Verkehr (2018) official website of the transport association with the consulted tags on “Unternehmen” (Organisation), “Tickets“ (grenzüberschreitender Verkehr) and „Extras“ (Projekt Euregiobahnen – Ergebnisse; EuRegio Kleinprojekt). Available at: https://salzburg-verkehr.at/ (accessed 26. April 2018)

Seifert C, Krannich T and Guenther E (2017) *Questioning investment decisions on the city level: Is it sustainable to upgrade wastewater treatment plants?* Proceedings of the 21th Conference of the Environmental and Sustainability Management Accounting Network (EMAN), Liège, 2017.

Sekin Ö (2016) *Vierte Reinigungsstufe in kommunalen Abwasserreinigungsanlagen. Möglichkeiten, Bemessung, Kosten und Betriebserfahrungen für die weitergehende Behandlung von Abwasser.* Masterarbeit zur Erlangung des akademischen Grades Diplom-Ingenieur, Masterstudium Umwelt und Verkehr – Bauingenieurwissenschaften, eingereicht an der Technischen Universität Graz.

SPD - Sozialdemokratische Partei Deutschland, Bayerisch Gmain (2016) Umstellung der Klärschlammentsorgung in Bayerisch Gmain. Aus der Gemeinderatssitzung vom 11.07.2016. 12.07.2016. Available at: http://www.spd-bayerisch-gmain.de/meldung.php?meldung=1222&page=47 (accessed 23. March 2018)

SPÖ - Sozialdemokratische Partei Österreichs, Ortsorganisation Anthering (2003) Die Gemeinde Wals-Siezenheim will die Abwässer von Ainring in Siggerwiesen klären lassen. In Anthering ist man darüber "entsetzt". (Flachgauer Nachrichten, 25.9.2003). Verband sagt Ja zu Abwasser-Tourismus (Flachgauer Nachrichten, 9.10.2003). Available at: http://members.aon.at/spoe-anthering/presse31 (accessed 23. March 2018)

Stadt Laufen (2018) Stadtbus Laufen-Oberndorf. Available at: https://service.stadtlaufen.de/stadtbus.html (accessed 26. April 2018)

Umweltbundesamt (2015) Can a fourth waste water treatment stage be financed by the waste water charge? Joint press release by the Federal Environment Agency and Helmholtz Centre for Environmental Research and Leipzig University. 18.03.2015. Available at: https://www.umweltbundesamt.de/en/press/pressinformation/can-a-fourth-waste-water-treatment-stage-be (accessed 23. March 2018)

Umweltbundesamt (2018) Phosphorrückgewinnung aus Klärschlamm wird zur Pflicht. Available at: https://www.umweltbundesamt.de/themen/phosphorrueckgewinnung-aus-klaerschlamm-wird-zur (accessed 23. March 2018)

Vanas F (2016) *Aktuelle Situation und zukünftige Entwicklungen bei der Klärschlammentsorgung in Österreich.* Masterarbeit zur Erlangung des akademischen Grades Diplomingenieur. Eingereicht am 26.09.2016 an der Universität für Bodenkultur Wien, Department Wasser-Atmosphäre-Umwelt.

Wismar M (2016) *Grenzüberschreitende Zusammenarbeit im Gesundheitsbereich.* European Observatory on Health Systems and Policies. Power Point Presentation at the conference „Gesundheit für alle“ - „Die Chancen grenzüberschreitender regionaler Zusammenarbeit in der Gesundheitsförderung und Gesundheitsversorgung“. Institut der Regionen Europas (IRE), 24. Februar 2016, Konferenzzentrum Hallwang bei Salzburg, Österreich.

Wikipedia (2018a) Gebietskrankenkasse. Available at: https://de.wikipedia.org/wiki/Gebietskrankenkasse (accessed 14. May 2018)

Wikipedia (2018b) AOK Bayern. Available at: https://de.wikipedia.org/wiki/AOK_Bayern (accessed 14. May 2018)

Wikipedia (2018c) Kliniken Südostbayern. Available at: https://de.wikipedia.org/wiki/Kliniken_S%C3%BCdostbayern (accessed 14. May 2018)

Wikipedia (2018d) Bayerisches Rotes Kreuz. Available at: https://de.wikipedia.org/wiki/Bayerisches_Rotes_Kreuz (accessed 14. May 2018)

Wikipedia (2018e) Barmer Ersatzkasse. Available at: https://de.wikipedia.org/wiki/Barmer_Ersatzkasse (accessed 14. May 2018)

Wikipedia (2018f): links to descriptions of various transport operators: Salzburg AG für Energie, Verkehr und Telekommunikation (https://de.wikipedia.org/wiki/Salzburg_AG), Albus Salzburg Verkehrsbetrieb GmbH (https://de.wikipedia.org/wiki/Albus_Salzburg_Verkehrsbetrieb), ÖBB-Postbus GmbH (https://de.wikipedia.org/wiki/%C3%96BB-Postbus), Regionalverkehr Oberbayern GmbH (https://de.wikipedia.org/wiki/Bayerische_Oberlandbahn), Österreichischen Bundesbahnen (https://en.wikipedia.org/wiki/Austrian_Federal_Railways), Bayerische Oberlandbahn GmbH (https://de.wikipedia.org/wiki/Bayerische_Oberlandbahn), Südostbayernbahn (https://de.wikipedia.org/wiki/S%C3%BCdostbayernbahn), Berchtesgadener Land Bahn GmbH (https://de.wikipedia.org/wiki/Berchtesgadener_Land_Bahn). (accessed 26. April 2018)

Wikipedia (2018g) S-Bahn Salzburg. Available at: https://de.wikipedia.org/wiki/S-Bahn_Salzburg (accessed 26. April 2018)

Wikipedia (2018h) Emergency medical services in Austria. Available at: https://en.wikipedia.org/wiki/Emergency_medical_services_in_Austria (accessed 14. May 2018)

Wikipedia (2018i) Emergency medical services in Germany. Available at: https://en.wikipedia.org/wiki/Emergency_medical_services_in_Germany (accessed 14. May 2018)

Wikipedia (2018j) Deutsches Eck (Verkehr). Available at: https://de.wikipedia.org/wiki/Deutsches_Eck_(Verkehr) (accessed 14. May 2018)

WHO - World Health Organization Regional Office for Europe (2008) *Emergency Medical Services Systems in the European Union.* Data Book. Report of an assessment project co-financed by the Directorate General for "Health & Consumers" of the European Commission and the World Health Organization (WHO) Regional Office for Europe.

WHO - World Health Organization Regional Office for Europe (2013) *Hospitals and Borders. Seven case studies on cross-border collaboration and health system interactions.* European Observatory on Health Systems and Policies, Observatory Studies Series 31 (Eds. Glinos I and Wismar M.).

Worseling K (2017) *The influence of the European Union in the field of emergency medical services.* Master Thesis, Maastricht University, Faculty of Health, Medicine and Life Sciences, Echt, 24-02-2017.

List of interviews

ZEKERT, Markus (Bavarian Red Cross, county-level association Berchtesgadener Land), 09.05.2018, questionnaire-based phone interview (response also in written form).

HOLZER, Anton (Salzburg Red Cross), 09.05.2018, questionnaire-based phone interview (response also in written form).

MEINDEL, Alexander (AOK Bayern),15.05.2018, questionnaire-based phone interview.

GSCHWENDNER, Josef (special purpose association for rescue service and fire brigade alert, ZRF Traunstein), 28.06.2018, short phone interview on possible cross-border solutions.

Workshop participants

Stakeholder Workshop 1: "Future challenges for cross-border wastewater treatment in the EuRegio" (13.06.2018)

STEMMER, Rainer (Wasserwirtschaftsamt Traunstein)

BÄMAYR, Richard, (Wasserwirtschaftsamt Traunstein)

HASLAUER, Wolfgang (RHV Tennengau Nord)

BREINLINGER, Wolfgang (RHV Tennengau Nord)

ERNST, Michael (Markt Marktschellenberg)

MATOUSCH, Günter (RHV Siggerwiesen)

SCHOLZ, Walter (RHV Saalfelden)

KALTNER, Josef (Stadt Bad Reichenhall)

GRUBER, Hans (Gemeinde Bayerisch Gmain)

SCHMUCK, Anton (Ingenieurbüro der Gem. Bayerisch Gmain)

STREITWIESER, Thomas (Stadt Laufen)

EISL, Josef (Gemeinde Großgmain)

GERMAN, Michael (Teisendorf)

Stakeholder Workshop 2: "Perspectives for cross-border healthcare and emergency medical services in the EuRegio" (13.06.2018)

REIMITZ, Klara (Verband der Ersatzkassen)

KERSTING, Joaquin (Kliniken Südostbayern, ÄLRD)

ZEKERT, Markus (Bayerisches Rotes Kreuz BGL)

GSCHWENDNER, Josef (Integrierte Leitstelle Traunstein)

LOHFEYER, Hubert (Gemeinde Unken)

KOEHLER, Jürgen (Paracelsus Medizinische Privatuniversität Salzburg)

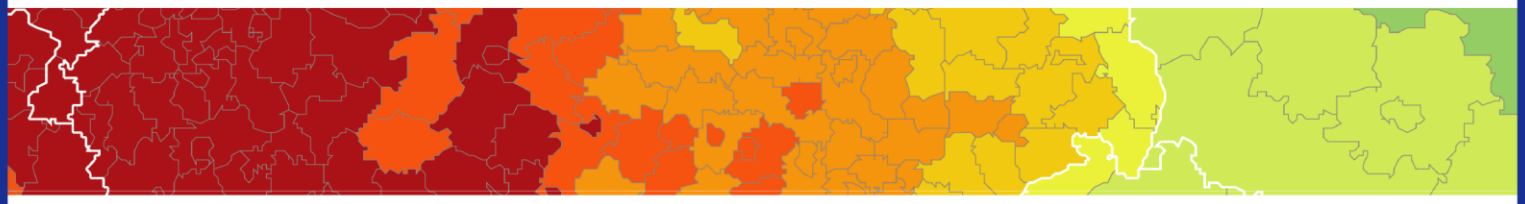
MEINDL, Alexander (AOK Bayern)

STEGER, Manfred (AOK Bayern)

HARTMANN, Andreas (SALK)

PETERDILL, Bernd (Österreichisches Rotes Kreuz Salzburg)

SELLNER, Johann (Salzburger Landeskliniken SALK)



ESPON 2020 – More information

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