





Dnr: 2019-RU000064 Projekt- INNO INFRA SHARE- Interreg Europé

Sharing Strategies for European Research and Innovation Infrastructure (INNO INFRA SHARE)

ACTION PLAN FOR SKÅNE 2019



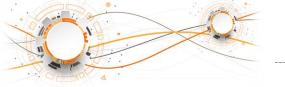






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Executive summary

The goal of Interreg Europe 2014-2020 Programme project Sharing Strategies for European Research and Innovation Infrastructures (INNO INFRA SHARE) is to improve the accessibility of local research and innovation infrastructure (RII) by SMEs. The Inno Infra Share project aims to develop strategies to improve RII governance, management and accessibility to RIIs by companies, particularly SMEs. In addition, the focus of the Inno Infra Share project is to promote cross-regional collaboration and expand and strengthen the RII networks. The Inno Infra Share project facilitates international collaboration, partnership building and interaction across the eight participating regions. In addition, the regional action plans are policy tools through which such international collaborations and partnerships are fostered and enhanced.

Eight European countries are partners in the project: Italy, the Netherlands, Belgium, Germany, Latvia, Estonia, Czech Republic and Sweden, all of which have RIS3 smart specialization priorities. The partnership aims to better understand the potential and the needs of RII located in the regions and share knowledge and experiences. Project partners engage in joint learnings and collaboration processes, involving regional and national stakeholders. The stakeholders contribute to the design and implementation of 8 regional Action Plans in their respective territories to foster inter-regional collaboration and internationalization processes and to improve policy instruments that will positively affect RIIs and improve their accessibility by SMEs. The project life cycle is from January 1st 2017 to December 31st 2020.

The eight INNO INFRA SHARE partner regions share another common goal: to enhance the commercial utilization of infrastructures and to improve industry's access to research and innovation facilities through cross-regional models, policy instruments, inter-regional partnerships and transfer of good practices. Some of the topics that have been discussed during the activities in phase 1 include: priorities and best way to foster commercial use of innovation infrastructures; the constellation of actors that need to be involved in this short and long-term process, the challenges faced by SMEs when accessing and using innovation facilities, how we connect production facilities and disseminate information about them so that they are not isolated in their respective regions and finally, how actors can influence policies in order to facilitate better access to RIIs.

Inter-regional cooperation within the INNO INFRA SHARE project also helps advance another policy instrument - sustainable business models for commercial utilization of infrastructure(s) and industry usage of research facilities. The goal is to ultimately boost regional industrial development so that companies at home can compete with companies abroad.







Lessons learned from the project as the basis for the development of the action plan

The executive summary provides detailed information about the process involved in the development of this action plan.

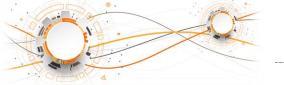
- Participation in the INNO INFRA SHARE peer review meetings and study visits are opportunities not only for learning and sharing but also for interaction and international collaboration. During these meetings partners interact and identify common goals. Partners learn about other regions' experiences and activities and bring these ideas to their home countries. Skåne learned about the infrastructures that exist in other participating regions of the INNO INFRA SHARE project and the comprehensive mapping conducted by Brainport as well as discussions involving pilot production facilities.
- Example 1: During the peer review meeting in Malmö, on April 12-13, 2018 an activity matrix was created where common interests across the eight INNO INFRA SHARE regions were identified. The document is a tool through which partners can learn more about common interests and based on that information develop their action plans. We had the opportunity to discuss the matrix with the INNO INFRA SHARE partner regions. That does not mean that the ideas on the matrix were adopted. But the matrix was used as a starting point.
- Example 2: During the peer review meeting in Malmö, the INNO INFRA SHARE partners discussed ideas for developing their action plans. In addition to the matrix, we listened to presentations. One such presentation was from Brainport and their mapping exercise of research and innovation infrastructures. More importantly during the peer review meeting and during the Learning Workshop on May 31st 2018, the project partners discussed innovation infrastructures linkages after we listened to a presentation by the European Pilot Network for Production Facilities and Innovation Hubs.

This action plan follows the template agreed upon by all INNO INFRA SHARE partner regions. The Managing Authority in Skåne will be receiving a copy of this document and someone in the organization will sign the action plan in April. The exact date is to be determined.

This document is divided into three main sessions. Part I discusses background and regional context. Part II lays out policy instruments and SWOT (strength, weakness, opportunities and threat) analysis. Part III describes the selected action.

Part I – General information

Project	INNO INFRA SHARE
Partner organization	Region Skåne







Country	Sweden
NUTS2 region	Southern Sweden - Skåne
Contact person	Ana Paula do Nascimento
Email and Phone number	anapaula.donascimento@skane.se + 46 (0) 72 467 18 81

Background and regional context

Geographic location and governance

Skåne, in Southern Sweden is a logistic hub due to its strategic geographical position. Besides roads and trains, ferry lines (e.g. Poland and Germany) are important features of the region (Kronmann et al., 2017). Railroads and the European route E20 connects Sweden to Denmark and the rest of Europe via the Öresund Bridge between Malmö and Copenhagen.

Regarding governance, the region has a self-governing administrative body, Region Skåne, funded by tax payer money. Region Skåne is responsible for healthcare, public transport, regional development and culture in the region. It can be seen as the equivalent of a local municipality. Region Skåne was established in 1998 as a pilot for regional counties, who were already responsible for health care and public transport, to take over the competence of regional development. The latter was, at the time, managed as a national competence. Region Skåne is governed by the people through the Regional Council, with its 149 directly elected members (Kronmann et al., 2017).

Research and Innovation in Skåne

There are several well-known universities and institutes with strong innovation capacity in the region, as well as R&D-intensive businesses with strengths in food, ICT and life sciences. The development of existing cluster initiatives focusing on excellence and optimisation into knowledge based open innovation arenas will be important moving forward. Well-known higher education institutions located in Skåne are Lund University, Malmö University, The Swedish University of Agricultural Sciences, and Kristianstad University. The recently inaugurated national synchrotron research facility MAX IV and the international neutron research facility European Spallation Sources (ESS), which is under construction, provide Skåne with international top class research infrastructures for e.g. materials sciences and life sciences (Kronmann et al 2017). The European Spallation Source (ESS) and the MAX IV Laboratory are expected to be one of the leading materials science research hubs in the world. They will enable scientists to study materials that we use today and to develop new materials and diverse products such as improved medicines, nanoparticles for different areas of applications including paint, catalysis or computing, and lighter and stronger packaging materials.







The MAX IV Laboratory, a Swedish facility for international use, is a synchrotron X-ray facility available to scientists from academia and industry in research fields such as biology, physics, chemistry, environment, geology, engineering and medicine. The facility has been built with a strong focus on environmental aspects and its innovative approach has won prizes and awards, such as the prize for best future project at the MIPIM real estate show in Cannes in 2014. The building is shaped as a ring as can be seen at Google Maps: https://goo.gl/maps/KHzBkdmDGd32. The MAX IV Laboratory is committed to actively engaging with industry and catering for its needs by providing customized and reliable access to the MAX IV beamlines. Many companies make use of the facility via collaborations with academia, mediator companies or through EU initiatives such as CalipsoPlus.

ESS, a European facility for European/international use, is a multi-disciplinary research facility based on the world's most powerful neutron source. The facility design includes a 5MW linear proton accelerator, a target station, 22 state-of-the-art neutron instruments, laboratories, and a data management and software development center. The most important service provided by ESS related to accessibility by SMEs are awareness creation, collaborative research and testing and validation.

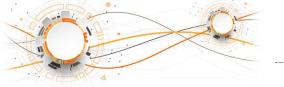
Skåne's strategic innovation is based on the region's International Innovation Strategy and the three smart specialisation areas: Smart Materials, Smart Sustainable Cities and Personal Health. There are several goals described in the aforementioned strategy, among them, foster international collaboration and create the appropriate conditions to promote innovation in companies and stimulate regional development. These goals can only be achieved through joint efforts for the greater benefit of the wider society. With two large-scale world-class research infrastructures under construction in the region, the Smart Specialisation Strategy of Skåne also aims to position the region as an international hub for materials science and create conditions for growth in highly innovative companies, including SME, from a wide range of sectors in the medical, energy and cultural heritage domains, to only name a few.

Part II – Policy Context

The Action Plan aims to impact	
	Investment for Growth and Jobs programme
Name of the policy instrument addressed	Skåne-Blekinge 2014-2020

In addition to the above, the regional action plan aims to support

Short/Long-term goals: facilitate company access to research and innovation facilities







- Gather and provide relevant information to policy-makers and political leaders on innovation infrastructures in Europe
- Long-term goals: Strengthen international collaboration and identify synergies among Inno Infra Share partner regions
- Create and expand research and innovation infrastructures and develop a network for pilot production facilities

Policy Instruments

- Learning from other regions on how to work with economic growth from R&I infrastructure, and connecting better to European peers in terms of R&I driven innovation. The governance and the discussions on structural change need valuable input and connections to be able to move in the right direction.
- Benefiting from enhanced and sustainable business models for commercial utilization of infrastructure(s) and increased industry usage of research facilities through cross border and cross regional models for infrastructure sharing.
- Addressing regional challenges low productivity, low employment rate, wide intraregional differences.
- Investing in innovation, enhancing the competitiveness of SMEs, supporting the shift towards a low-carbon economy, extending broadband deployment, sustainable urban development.

Source: Skåne policy instrument/RIS3

The EDRF program for Skåne-Blekinge 2014-2020 is the core financial tool for regional development in the Skåne region with a budget of 61 million Euros in total. The two most important specific goals under the TO1 concern collaboration for sustainable innovation infrastructure and strengthening innovation capacity in the smart specialization areas. Skåne leadership has selected three areas of smart specialization: sustainable cities, personal health and smart materials. The latter was selected due to the existing and upcoming research and innovation infrastructures which makes the operational program and its connecting S3 strategy important to further development. One of the important issues the OP and S3 strategy aim to address is the low level of internationalization in Skåne examined in the 2012 OECD survey. The implementation and improvement of the operational program and its connecting S3 strategy is one of the main goals of the Skåne development policy.













SWOT

The SWOT analysis below is based on interviews with former employees of start-up companies (March-April, 2018), university professors, nanotechnology experts and documents (e.g. reports)

Strengths

- Strong innovation capacity in Skåne
- R&D intensive businesses with key strengths in food, ICT and life sciences.
- Skåne stands out as an innovative region for investment in research, development and patents and has moved towards a more knowledge-intensive business structure.
- During the period 1998-2009, new business in Skåne increased by 100 percent, compared with 75 percent in the country. Source: Skåne regional development strategy, June 2014.

Weaknesses

- Employment growth is mainly within existing companies
- Skåne has a strong innovation power but needs more viable and growing companies.
- Innovation skills need to be promoted, both within specialized knowledge-intensive companies and within the existing broad business community.
 Source: Skåne regional development strategy, June 2014)
- Low level of internationalization in Skåne (OECD, 2012).

Opportunities

- Further development of research and innovation infrastructures through ESS and the ProNano project. The latter is part of a large ecosystem in Lund to facilitate the development of nanotechnology-related products. The facilities will be production-oriented and the goal is that many of the applications will originate from Swedish research on nanowires (Source: ProNano website).
- Between 2009 and 2020, total demand for labor in Skåne is expected to increase by 8 percent but demand for individuals with only primary education is expected to decrease by 23 percent.
- The activities carried out during phase 1 of the Inno Infra Share project and the high level of partner engagement indicate that there are several opportunities for continuing cross-regional collaboration which will strengthen research and innovation infrastructures network.

Threats

- The need for a stronger inter-regional collaboration is evident: "The EU requires regions to develop smart specialization strategies as a priority but access to talent is a top hinder." (Brainport peer review meeting, 2017).
- Funding is still an obstacle: need for more systematic and reliable funding.
- "It can be difficult for SMEs to access RIIs due to complicated: lengthy negotiation processes – it can take 2 years!" (Former start up employee, 2018).
- Cumbersome and formalized processes: writing proposals is a requirement for using lab equipment: "I don't know what I will need in six months from today!" (Former start up employee, 2018).
- It is not just about accessibility but also costs: The use of lab and machinery for R&D can be expensive particularly for SMEs.
- "It is not just about accessibility to research and innovation infrastructures but about availability."
- Time is also viewed as cost.
- Technical and security concerns in the lab: risk for contamination (Former start up employee, 2018).







Part III – Description of Actions

ACTION

Pilot Production facilities for Cross-Regional Collaboration

Aim

The aim of the action 1 is linked to the INNO INFRA SHARE objectives and vision in that it also focuses on networking research and innovation infrastructures, promoting collaboration opportunities at the cross-regional level to enable competitiveness and growth for local firms and foreign users.

A pilot production facility is a physical infrastructure/labs/machinery necessary to produce products or pre-commercial products. It should not be presumed that pilot production facilities are already connected, that how to use them is already known to everyone. In fact, it appears that information about these facilities are rather scattered.

The Basis for the Development of this Action Plan

The Skåne action plan, "Create Pilot Production Facilities Network," is based on the activities carried out during phase 1 of the INNO INFRA SHARE project such as presentations and discussions during the peer review meetings (April 12-13, 2018) and the study visit in Lund, Sweden (May 29-31, 2018). More specifically, the ideas for action 1 originate from presentations by Ilse van Gulik, Brainport about the mapping of their research and innovation infrastructures and by Mr. Saeed Dehghani, CEO at Onvega. Ilse van Gulik presented: "Mapping of the R&D Infrastructures in the Region" showing 70 facilities identified and 26 in the database showing Material Analysis Lab, the Holst Centre, Laboratory for Cell and Tissue Engineering, among others. Mr. Dehghani presented European Network for Pilot Production Projects and Innovation Hubs and talked about the *importance of promoting pilot production* projects for the development of advanced materials and key enabling technologies in Europe. He also mentioned the importance of cooperation and alignment between existing interventions and projects and the challenges faced by SMEs. One good example is that it is often difficult for companies to find the appropriate facilities they need to develop their projects and then establish trust with those facilities. All INNO INFRA SHARE partner regions, who attended the learning workshop, participated in these discussions.

Note: Action 1 directly derives from the exchange of experience in phase 1 of the project. The exchange of experience is well described above with specific examples. The European Pilot Network for Production Facilities (EPPN) was part of such exchanges and discussions. Our







action 1 and the European Pilot for Production Facilities differ. The goal is to connect our own facilities and therefore create/expand our network. Another objective is to develop the regional production facilities and then connect them to Europe. The EPPN is simply used as an example of a theme discussed during phase 1 during the INNO INFRA SHARE Learning Workshop on May 31st. Therefore, the work we do is different from the work EPPN does because we will first complete the necessary steps at home (see details below) on how to achieve action 1. Furthermore, this action plan builds on internal discussions at Region Skåne about implementing action 1 to connect these production facilities across interested regions.

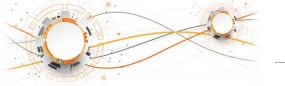
During meetings and discussions with the INNO INFRA SHARE partners, information was exchanged. We had the opportunity to learn about the infrastructure mapping Brainport Development has been working on. We also learned about the infrastructures that exist in other regions. During those meetings partners pointed out the relevance of not only supporting SMEs access to research and innovation infrastructures but also raised questions about how to connect these infrastructures. Therefore, during the phase 1 of the INNO INFRA SHARE project, Skåne saw these discussions and activities as an opportunity and to give this topic further consideration: the need to provide access and connect these facilities as one larger network. Action 1 reflects Skåne's desire to put into practice ideas surrounding connecting innovation infrastructures as a network. This type of action requires the involvement of our European partners and the regions involved in the Inno Infra Share project.

Background

During the INNO INFRA SHARE peer review meetings and study visits, representatives of the eight partner regions discussed the project, opportunities for cross-regional collaboration and ideas for their regional action plans. During the peer review and study visits it became clear that mapping of infrastructures was an important exercise during phase 1 and the step that precedes connecting infrastructures across Europe. For instance, Brainport and Skåne have conducted mapping of their RIIs. One of the topics debated during peer review and study visits was not just accessibility of RII but also how we, regions can disseminate knowledte about infrastructures and how we connect them so that regions know about each other's RIIs and that is, how to increase the communication about these infrastructures.

In addition, it became clear, after the November conference, that not only accessibility but also infrastructure availability was an important to consider due to lengthy processes SMEs go through in order to rent equipment. Inter-regional collaboration must work for our SMEs enabling them to grow. In order to grow, companies need to build their innovation networks or at the very minimum access information and infrastructures. As the European Commission report on Pilot Production in Key Enabling Technologies state, "The quality of the innovation network is crucial to pilot production; the development of the production system is complicated and requires cooperation along the value chain. This is especially true within the multi-KETs domain, as projects are more complex and can usually not be set up by one partner alone" (European Commission, 2015).

As a next step, Region Skåne plans to develop a network for pilot production facilities or to help expand the existing network.







How would this particular action improve the policy instrument stated in this action plan – investment for growth and jobs program? Here is an excerpt from a section in the project application form asking how the region sees the improvement of the policy instrument and the text below helps to explain why action 1 is important.

"There is a need to learn from other regions in how we can work with growth from R&I infrastructure, and there is a need to connect better to European peers in terms of R&I driven innovation. The governance and the discussions on structural change need highly valuable input and connections to be able to move in the right direction."

Growth and job creation are an ongoing process. It is a both a short and long-term goal and although this action plan strives to achieve this goal in the short-term, it can take some time before a region sees the expected results such as job creation. One immediate result that we are expecting is discussions with other European regions and the knowledge and information sharing about ours and other **pilot facilities will spark interest in short-term investment in these infrastructures**. This investment, will in turn, **result in job creation and in more regional investment**. Our hope, **in the short-term is that implementing action 1 will increase the possibility for SMEs to have more access to infrastructures to take a step into a demonstration phase, develop a product and and/or a technology and achieve regional growth. If this action 1 is successful, then we also give a company in our region the opportunity to succeed and we can use this as a successful example in order to get more investment. This is aimed at stimulating the growth of SMEs and the development of a new technology or a product. Share facilities for pilot production would be an optimal model as they serve multiple users. Certainly, these facilities have advance equipment and staff with the right expertise and training to help users.**

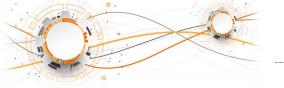
To increase the sustainability and effectiveness of a shared facility, not only should they provide equipment, operating personnel and researchers to develop the production line, but also services like commercial micro-production, testing/validation of products, training of personnel and incubator services. Last but not least, they can play a crucial role in enhancing the innovation ecosystem. ("Pilot Production in Key Enabling Technologies," European Commission, 2015, a report prepared by the Netherlands Organization for Applied Scientific Research).

All of the elements in the statement above – operating personnel, researchers, users, incubator services, investors – that comprise an innovation ecosystem are key in a pilot production facility and this means that for every expert and is hired to operate equipment, a job is created. For every SME that becomes a customer of a pilot production facility because it knows where to find it and how to access it, the potential for development and growth becomes larger.

Link to full report: http://www.mkpl.eu/fileadmin/site/final/mKETs_brochure_web.pdf

Goal:

Create a network for pilot production facilities through inter-regional collaboration Other goals: Increase the connection between Skåne and the partner regions







Action details

Action 1 consists of two sub-actions. Sub-action 1 which involves cross-border communication and sub-action 2 involves communication within borders, among other activities (described below).

Communicating outside Skåne and between regions

Relevance: dissemination of information about these facilities so that companies across European regions become aware of the infrastructures that exist.

How we plan to implement sub-action 1

Sub-action 1. Discuss with INNO INFRA SHARE partner regions the topic pilot production facilities and demonstration infrastructures in order to engage the regions and connect. This will be done through conference calls or in person meetings when feasible. In addition, participate in dissemination sessions such as forums across Europe to present the Skåne infrastructures and innovation ecosystem to make this information available to other regions and, at the same time, gain knowledge of their research and innovation infrastructures.

Communicating within Skåne and with Local Stakeholders

How we plan to implement sub-action 2

Sub-action 2. Gap analysis: Note that a mapping exercise was conducted during phase 1 of the project and in phase 2, we will do the analysis and NOT the mapping. This gap analysis consists of having an overview of the current status and identifying the needs of relevant actors such as companies (users) for the pilot production facility project. This gap analysis will be accomplished by inviting the relevant actors to participate in the analysis workshop (e.g. local companies, local research institutes and the EPPN experts to present what they are already working on).

- Step 1: Set the framework this means that we need to establish a baseline by providing everyone in the workshop the same background information that we discussed in phase 1. In order to accomplish that, we will invite Mr. Saeed Dehghani, CEO at Onvega to present EPPN.
- Step 2: Gather the perspectives from the relevant actors, as for example, local companies and research institutes. Existing mapping of nanotechnology infrastructures in Europe can assist in furthering this step.
- Step 3: Proceed with the analysis after the collection of all the information from relevant actors.
- Step 4: Summarize the analysis in "next steps" and assign staff to implement them.
- Step 5: Communicate the results from the gap analysis to other regions according to action 1.







Note: The INNO INFRA SHARE activities during Phase 1 are directly connected to action 1 and to steps 1 through 5 (above). In addition, in order to be in alignment with other projects and activities in Europe, we are also being inspired by the work done by the European Pilot Network for Production Facilities (EPPN) and Nanofutures.

Target groups

In addition to Region Skåne, the governmental organization in Southern Sweden responsible for preparing the action plan and for identifying implementation strategies, other relevant actors include:

Region Skåne

Role: catalyst; initiator

RISE Institutes of Sweden

Role: organization that will help implementing this action plan

• Companies, particularly SMEs

Role: customers/users of infrastructures

Other Inno Infra Share partner regions

Role: contributors to the development and/or expansion of the network

Skåne stakeholders (e.g. local clusters, universities).

Role: intermediaries working with companies; aware of companies' needs/challenges

Governance structure of the Action and players involved

International level: The Inno Infra Share partner regions, EPPN, Nanofutures, etc.

National level: Tillväxtverket or the Swedish Agency for Regional and Economic Growth.

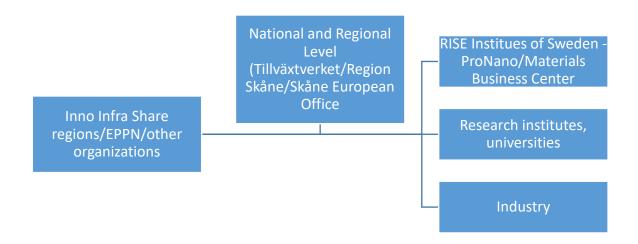
Regional level: Region Skåne Innovation and Entrepreneurship Unit, Southern Sweden.

Other stakeholders: RISE Institutes of Sweden, industry in Skåne and industry located in the eight partner regions, universities, research institutes, local authorities, other organizations.









Timeframe

Implementation starts in April/May of 2019 and it will be ongoing according to RISE Institute's schedule and activity planning for the year 2019







Funding sources

Skåne-Blekinge policy instrument through Tillväxtverket and Region Skåne

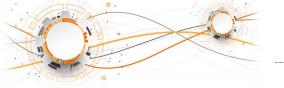
Action	Stakeholders	Timefra me	Costs	Funding source
Action	Region Skåne, European regions, industry, universities, RISE Institutes of Sweden, Skåne European Office, Tillväxtverket (Swedish Agency for Economic and Regional Growth)	June 2019 or longer: implementation phase Monitoring: August 2019 –	Sub action 1: Travel costs (1 or 2 meetings in Europe for 2 stakeholders from Sweden, when financially feasible, otherwise through conference calls). Skåne): € 1 300 (2 days abroad for 2 people) for 2 occasions Total: € 2 600 Sub action 2: workshop costs (catering only): 310 € (20 people lunch and coffee) Room: 0 cost Gap analysis: 8,500 € Communicate results costs: 1300 € (2 days abroad, 2 people) Total sub-action 1 and 2: 12,710 €	Possible contribution from regional funds (e.g. Skåne- Blekinge program) and Region Skåne

Table 1 Costs

Indicators

Quantitative indicators:

- Number of meetings planned
- Number of participants attending and level of engagement (level of interest from participants)







Number of companies involved

Qualitative indicators:

- Types of gaps/challenges/needs identified
- Qualitative measure of success through short interviews/discussions with other regions to gauge appropriateness of choice of action – what worked and what has not worked

Output and Result indicators + method for measuring

The monitoring and follow-up will be done through reports and through bi-monthly conference calls with all INNO INFRA SHARE partners. This was decided during the INNO INFRA SHARE technical meeting on November 23, 2018.

1 progress report
1 final report
1 progress update meeting
If feasible: Impact indicators (long term) + method for measuring
Same as above
See signature of managing authority in a separate sheet.
Date:
Date : Mr. Henrik Berven:
Mr. Henrik Berven: Head of the Managing Authority of the Regional Operational Program Skåne-Blekinge 2014-2020 confirming