

# Herit Data

Final Conference

Madrid

*Dr. Alessandro Monti*

07 April 2022





# HERIT DATA PROJECT

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- Herit Data exploited **Digital tools, Open-Big-Smart Data and Open Source solutions** such as the Herit Data Platform, Sentiment Analysis, Web Applications.
- Herit Data used innovative methodologies such as **Nudging and Influencer marketing campaign**.
- Herit Data with its **six pilot projects** implemented solutions and methodologies within six pilot sites with very different characteristics (static data, real time data, data from sensor, connection to other platform et al.)
- Herit Data promotes **new technologies/methodologies in tourism** planning, management and decision making, involving by design the synergies between the various institutional levels/stakeholders and always favouring the “items” already deployed on the territories.



# OUTPUTS HERIT DATA

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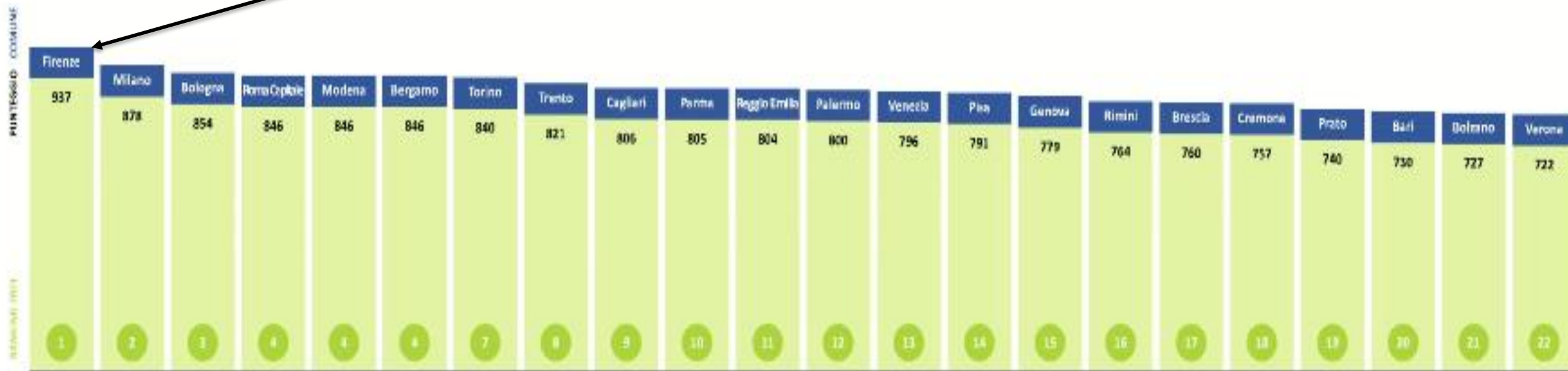
- **Six pilot sites exploiting the HERIT-DATA platform** : Dubrovnik (Croatia), Pont du Gard (Région Occitanie, France), Ancient Olympia (Western Greece), Florence (Tuscany Region, Italy), Valencia (Valencia Region, Spain) and Mostar (Bosnia-Herzegovina) demonstrating the versatility of the technological solutions and methodologies adopted and how these can be a valid example/suggestion/basis for institutions, tourism operators and citizens.
- Data selection and acquisition, to monitor “people” flows by means of **cameras, thermal cameras, wi-fi access points, sentiment analysis et al.** Transformation of acquired/collected data in indicators and/or enriched data, to populate the many dashboards. Usage of monitoring process to apply mitigation and improvements actions. Usage of Web App, App and physical tools disseminated within the city, to outreach tourists/people and virtuously sustainably orient their behaviours.



# Florence Smart City – ICT Rank

TOP 22 ICR 2021

**Florence: 1st on the ICity Rank 2021**



# Florence Smart City – App & Tech

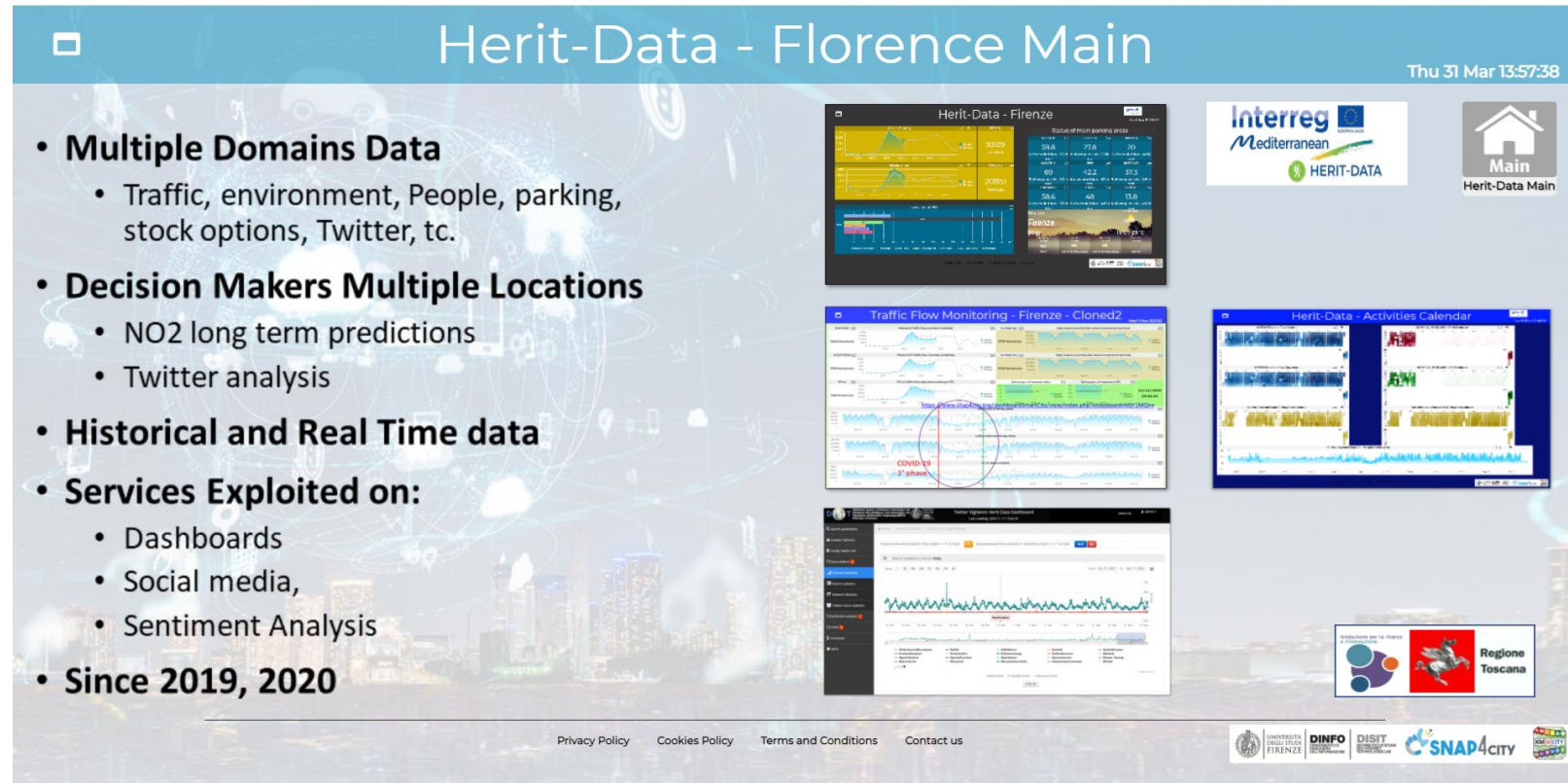
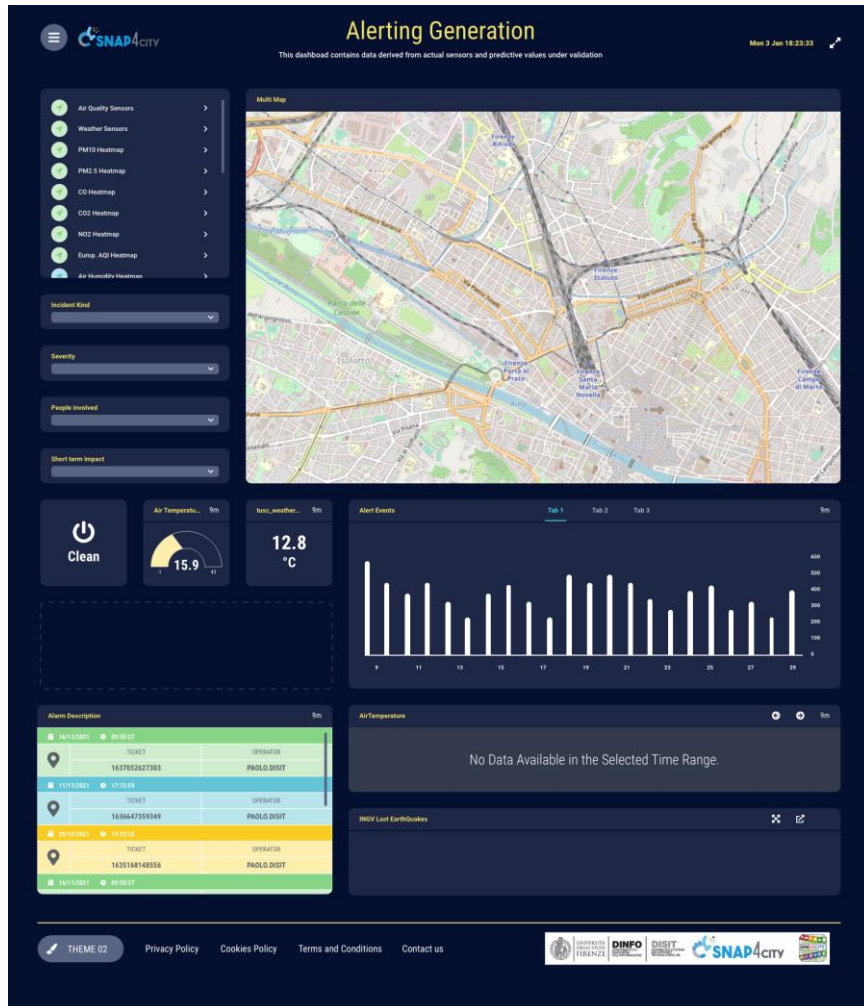
## IoT and technologies

## Number of App





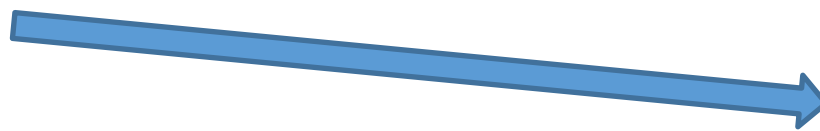
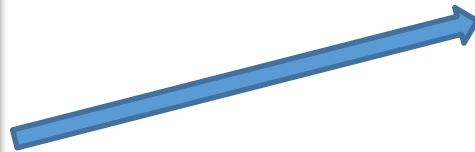
# The platform



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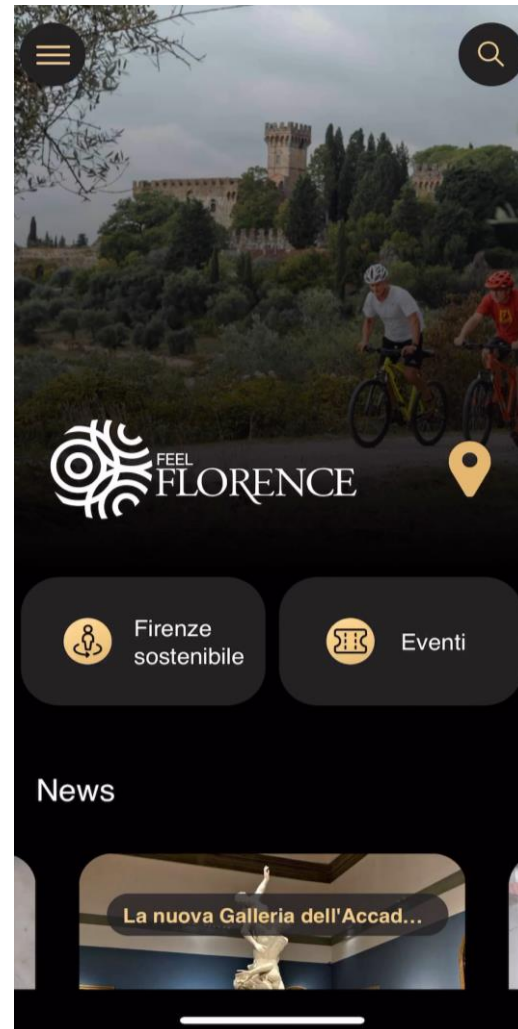
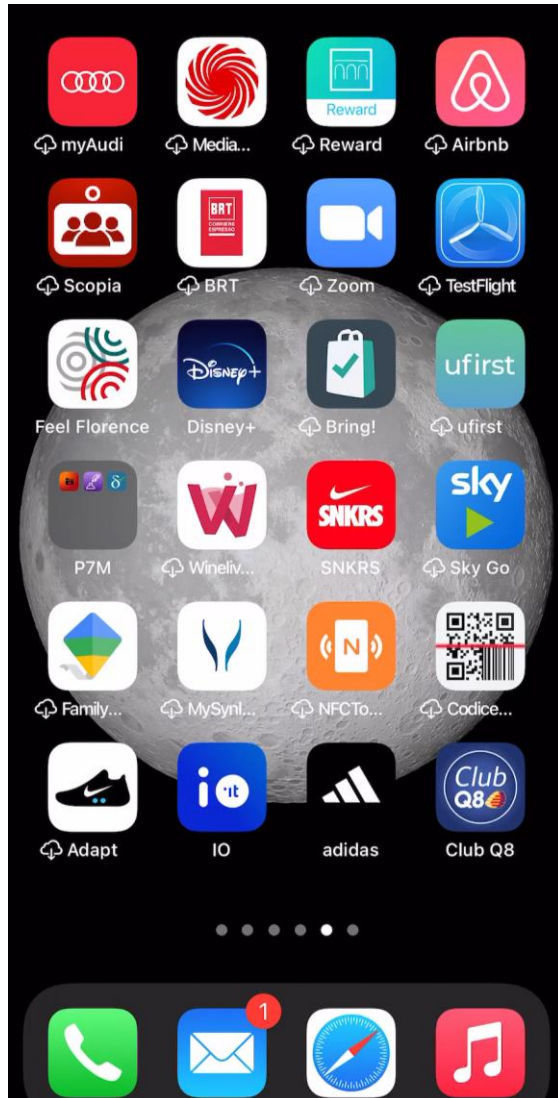
## A colorful, abstract drawing of a landscape. On the right, there is a large, red, multi-story building with many windows. To its left, there are green hills and a blue sky. The drawing is done in a childlike, expressive style with bold colors and simple lines.



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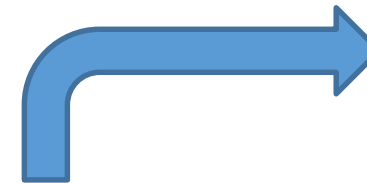
# The Florence App: FeelFlorence



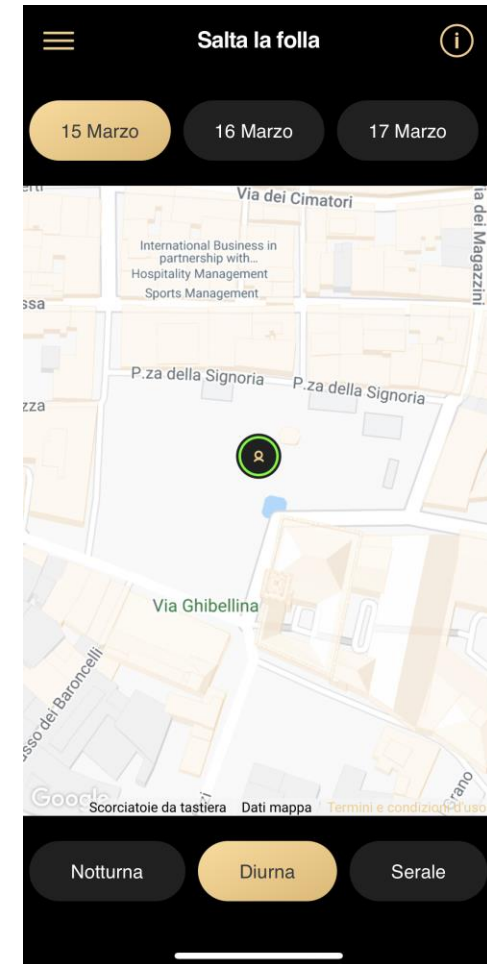
UNESCO area



Wi-Fi Data



Signoria square



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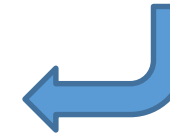
# Influencer Marketing Campaign



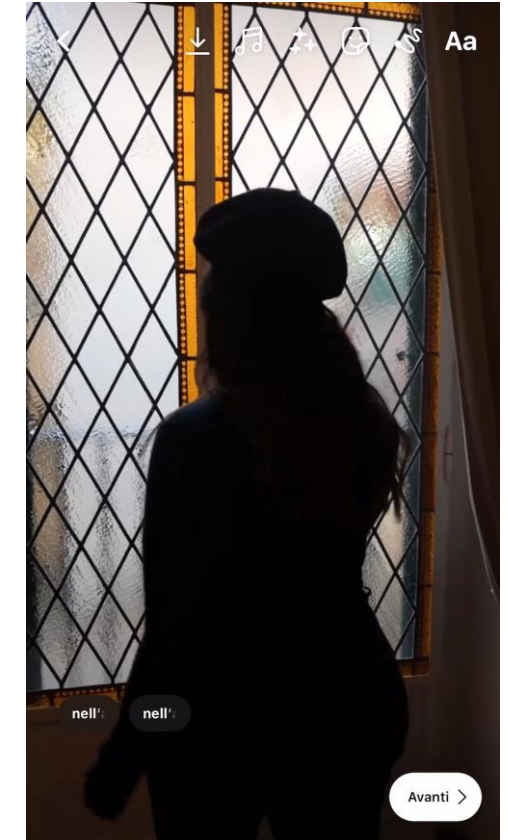
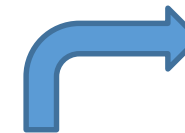
**Laura**



**Gianluca**



**Martina**



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# Thermal Camera



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# Thermal Camera: live feed



Live feed  
during  
Florence  
Study Visit

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Interreg  
Mediterranean



HERIT-DATA

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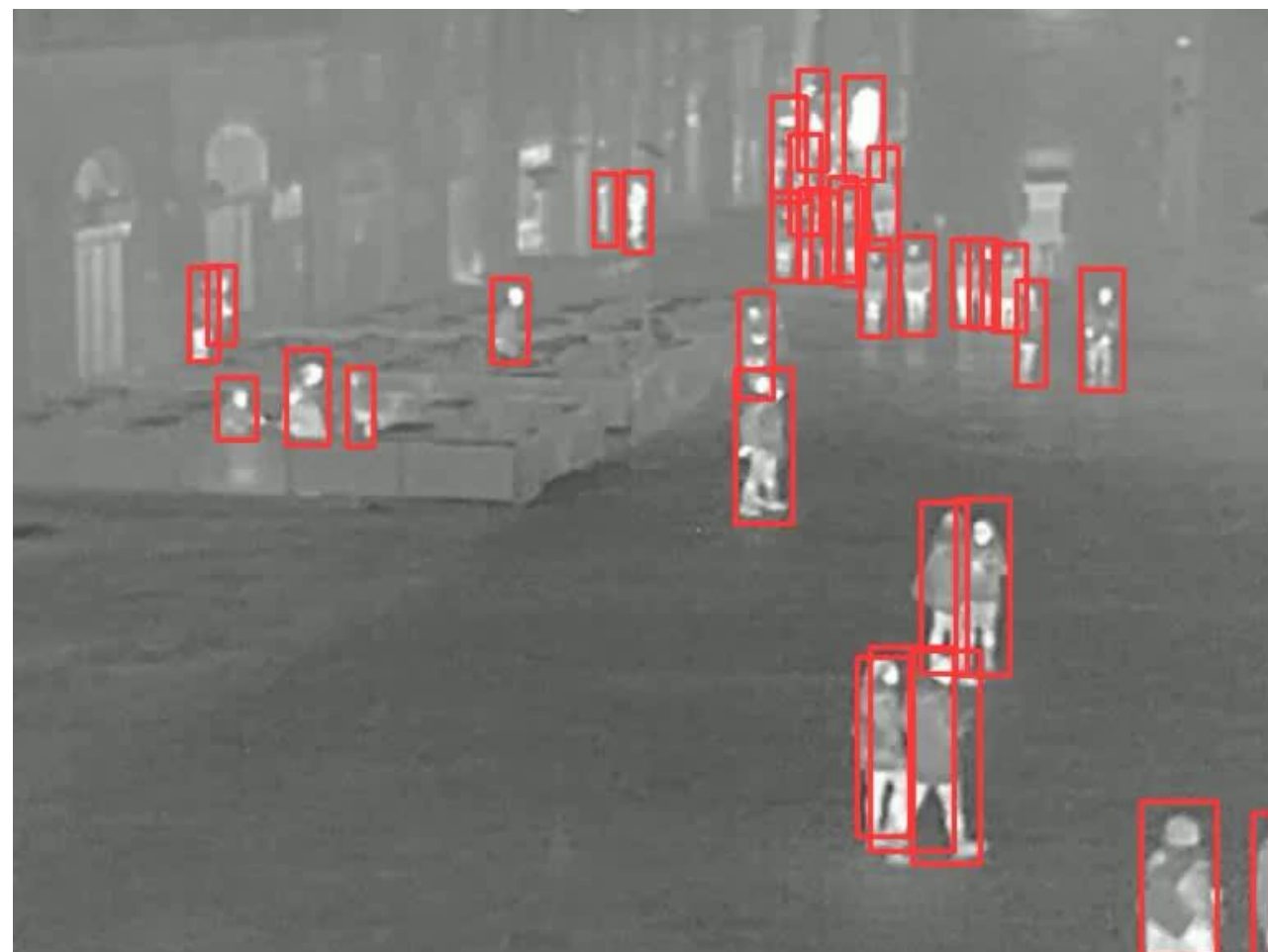
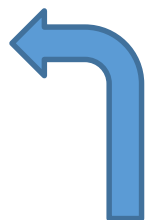
# Thermal Camera: Thermal footprint & Trajectories



Via  
Vacchereccia



Loggia dei  
Lanzi



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Mediterranean



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HERIT-DATA

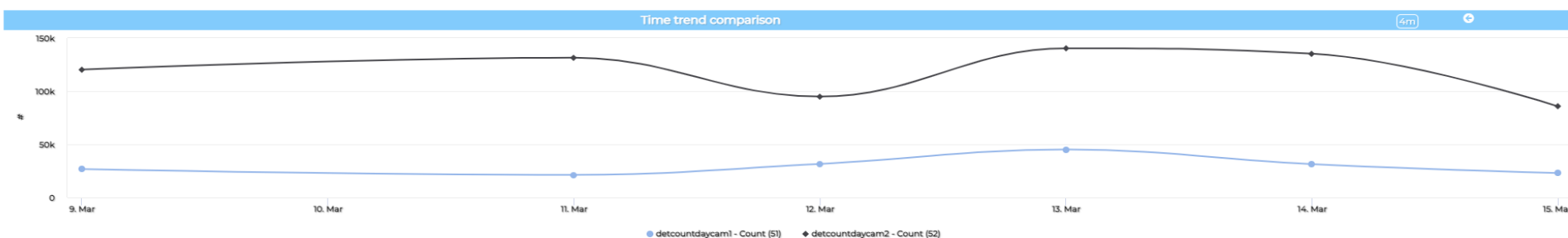
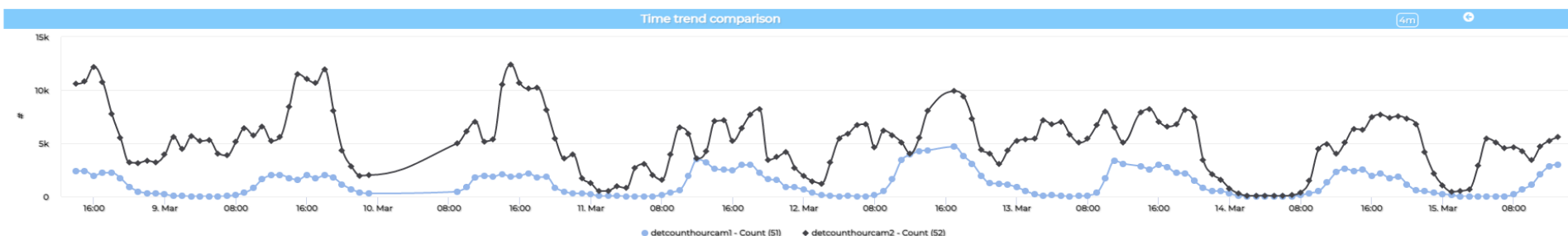
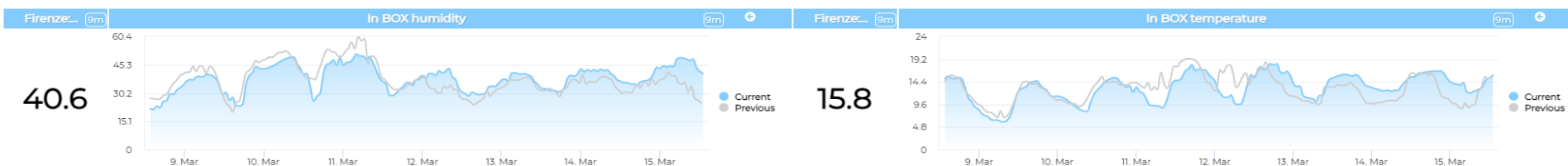


# Thermal Camera: one week trajectories



## Detection BOX Snap4Thermal PV Firenze

Tue 15 Mar 13:30:41



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Project co-financed by the European Regional Development Fund



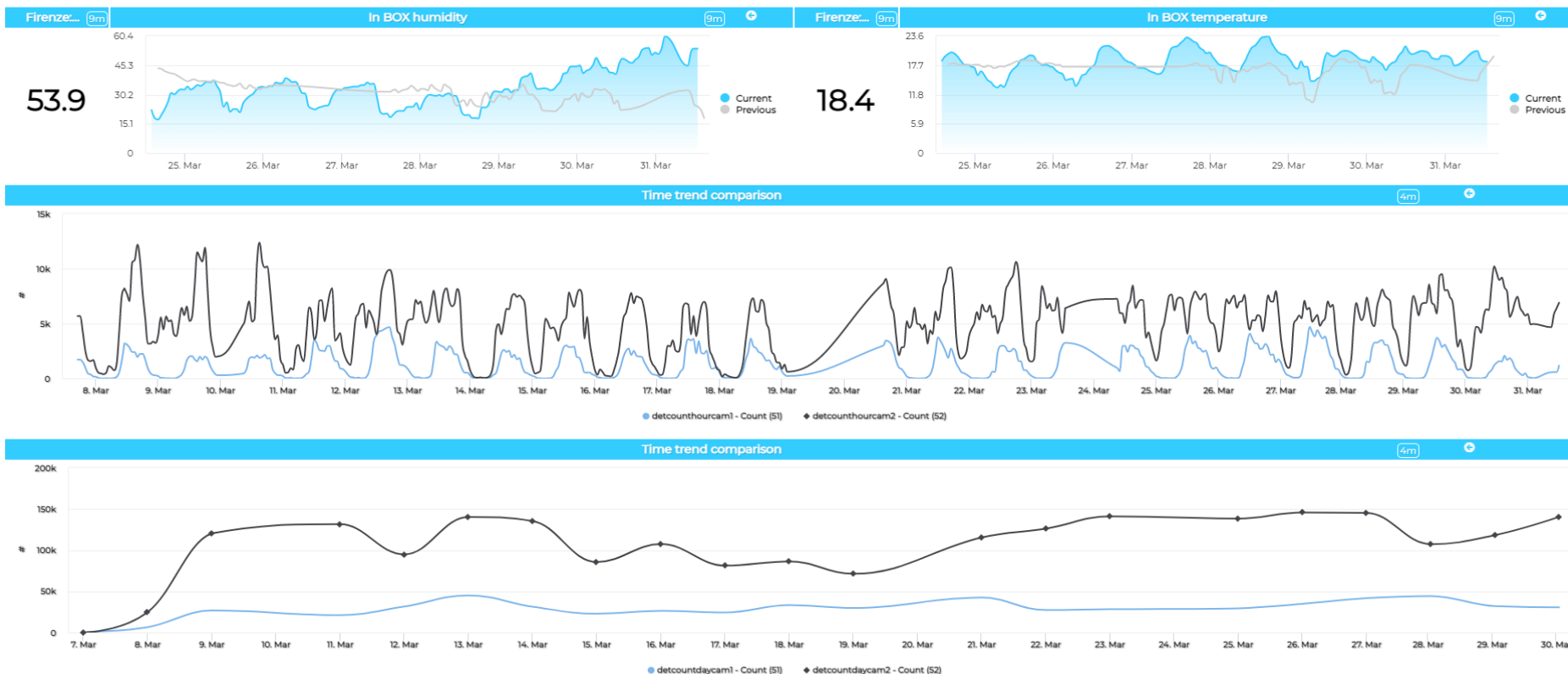
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# Thermal Camera: one month (almost) trajectories



## Detection BOX Snap4Thermal PV Firenze

Thu 31 Mar 13:56:31



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# 3D and data



Piazza della Signoria

3D model

Data feed – NO<sub>2</sub>

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# Sentiment Analysis “testbed”

**Test Event:** clashes between police and demonstrators in Florence, during an unauthorized demonstration against the government's Covid-19 measures (night of 30 October 2020).

## Italy: Protests flare in Florence over restrictions

31 Oct, 2020



Florence mayor condemns violence and vandalism in historic centre in "surreal, terrible and painful night" for Tuscan city.

Protesters clashed with police in central Florence last night during an unauthorised protest over Italy's latest restrictions aimed at curbing the spread of covid-19.

## Oct. 30 Protest Devastates Florence

10/31/2020



During the unauthorized evening demonstration against recent social lockdown pandemic measures lasting four hours in downtown Florence on the evening of October 30 saw participants throwing Molotov cocktails, smashing shop windows and caused car windshields.

### TOP NEWS STORIES

**Oct. 30 Protest Devastates Florence**  
During the unauthorized evening demonstration against recent social lockdown pandemic measures lasting four hours in downtown Florence [...]

**COVID Demonstrations Hit Florence**  
Unlike the U.S. protesters in Italy reserve public space for peaceful demonstrations which are organized to communicate a [...]

**New Anti-Covid Regulations: Dos & Don'ts**  
Given the upswing in Coronavirus infections and consequent hospital admissions since the beginning of October, Italian Prime Minister [...]

**New Pandemic Regulations in Italy**  
In the face of the rise of Coronavirus infections, the Italian government has extended the national state [...]

**LA COMPAGNIA**  
Original Language Movies  
International Film Festivals

**ORCHESTRA DELLA TOSCANA**

Interreg  
Mediterranean

HERIT-DATA

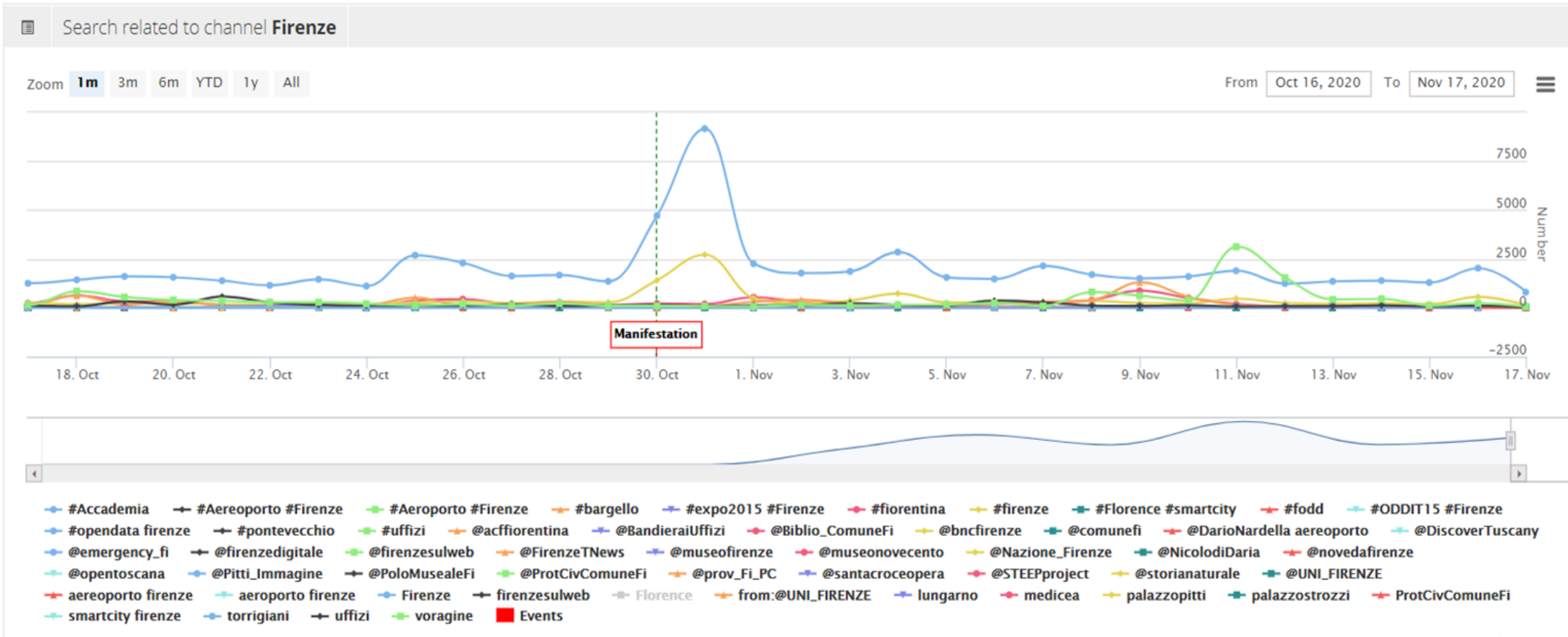
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# Sentiment Analysis “testbed”

## 30 October 2020 Demonstration



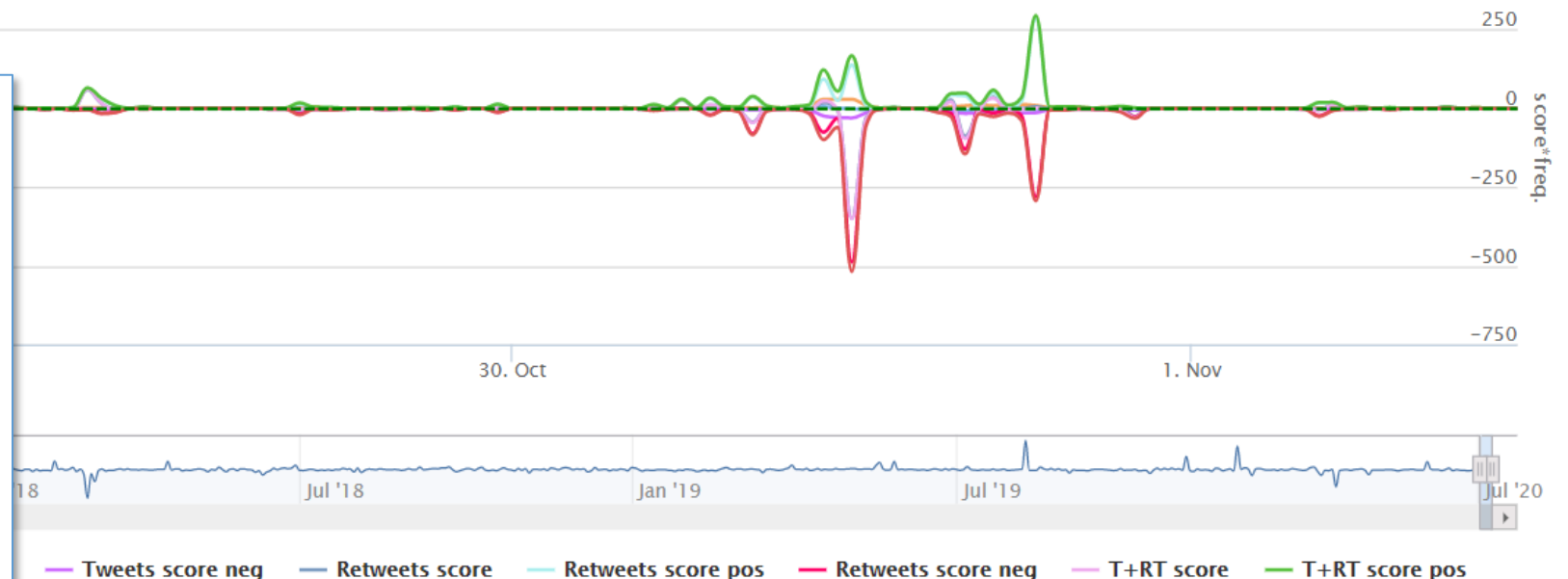
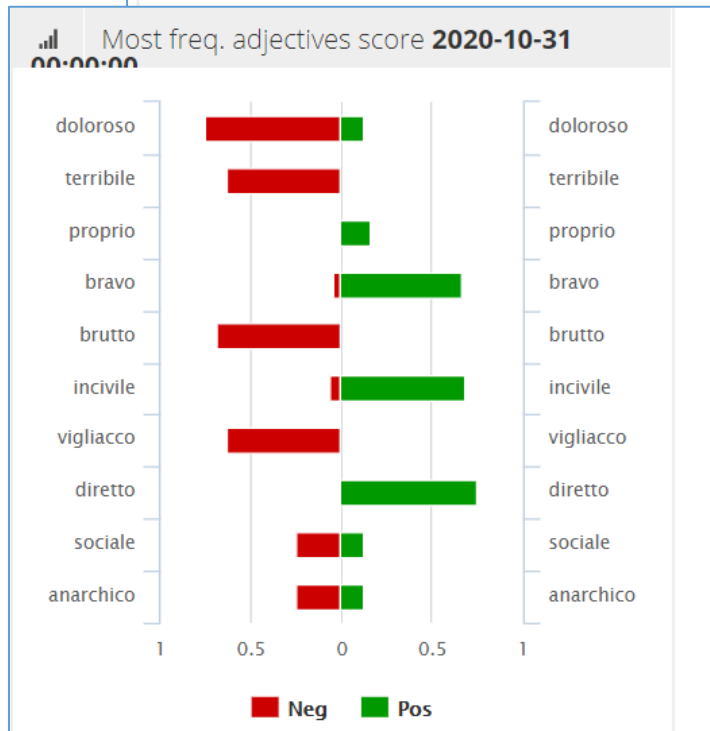
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# Sentiment Analysis for search Florence

## Sentiment analysis: #firenze

Zoom 1m 3m 6m YTD 1y All

From Aug 1, 2020 To Nov 1, 2020

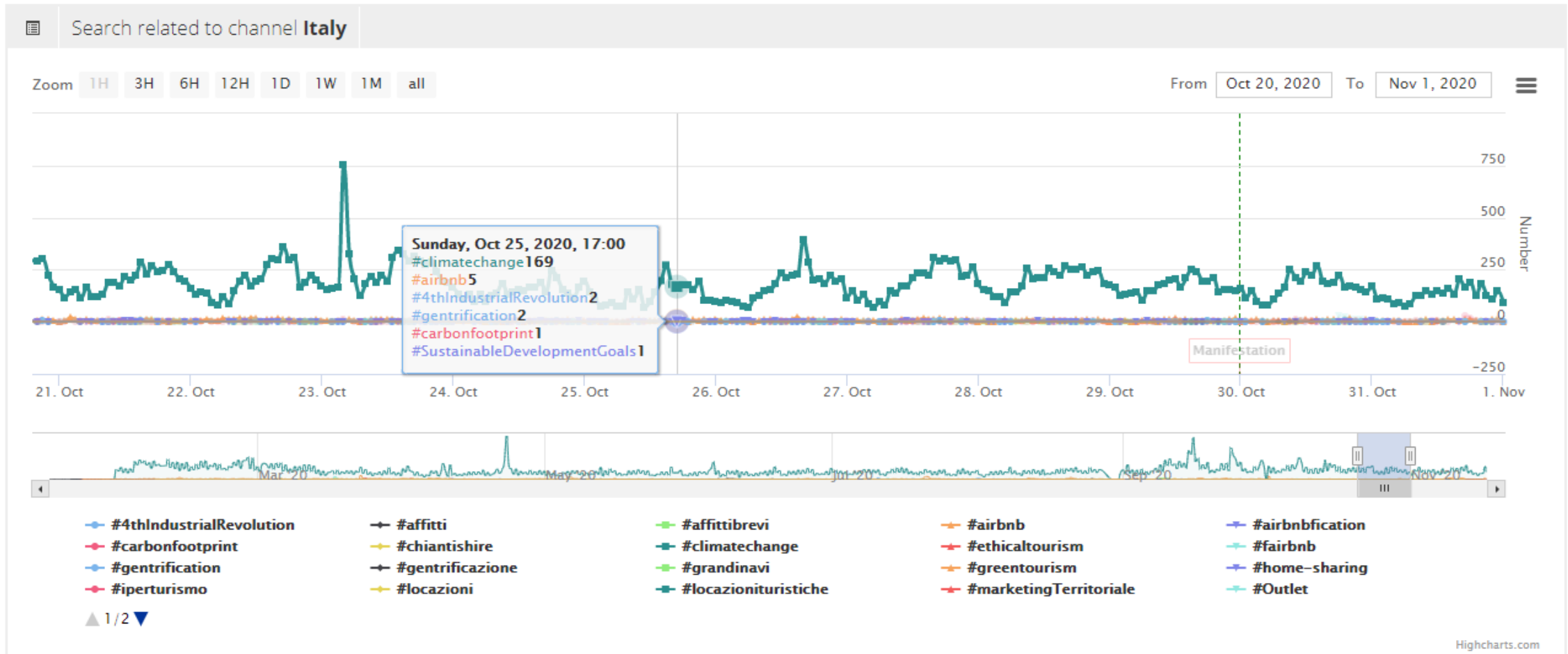


[http://disit.org/tv/index.php?p=sa\\_ricerche&ricerca=436](http://disit.org/tv/index.php?p=sa_ricerche&ricerca=436)

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# Sentiment Analysis running



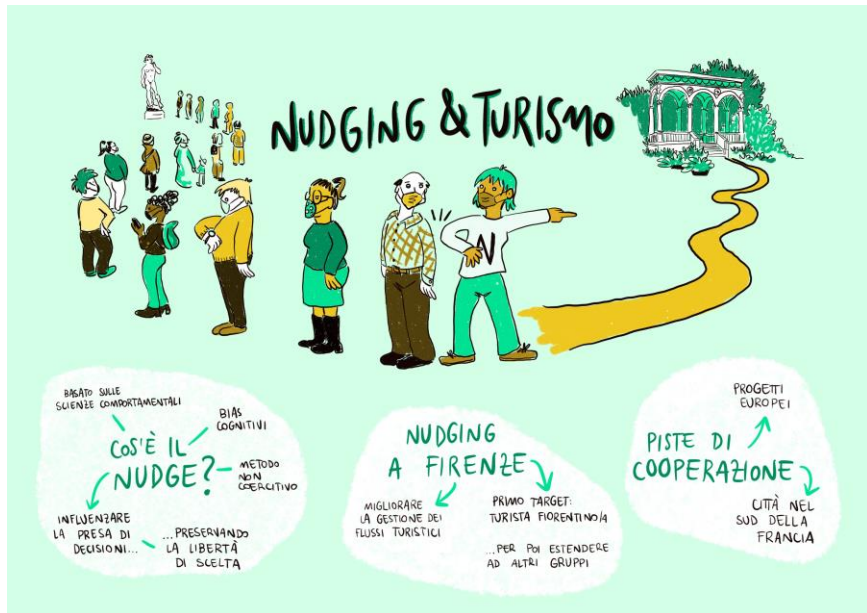
# Sentiment Analysis

## Twitter Vigilance Herit-Data: *Some Numbers*

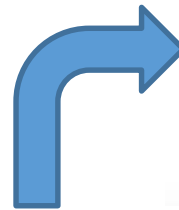
Channel Name	Total Number of Collected TW+RTW	Number of Collected Tweets	Number of Collected Retweets	Twitter Volume Processing Time Range	NLP & Sentiment Analysis Processing Time Range	NLP & Sentiment Analysis Languages
<b><i>Spain</i></b>	113.7 Millions	40.99 Millions	72.49 Millions	From 30-01-2020 to current datetime	From 01-02-2020 to current datetime	English, Spanish
<b><i>France</i></b>	50,1 Millions	16.0 Millions	34.1 Millions	From 30-01-2020 to current datetime	From 01-02-2020 to current datetime	Italian, English, French
<b><i>Greece</i></b>	12.3 Millions	4.2 Millions	8.1 Millions	From 30-01-2020 to current datetime	From 01-02-2020 to current datetime	English
<b><i>Italy</i></b>	2.97 Millions	1.0 Million	1.9 Millions	From 30-01-2020 to current datetime	From 01-02-2020 to current datetime	Italian, English
<b><i>Croatia</i></b>	35.8 Thousands	15.5 Thousands	19,8 Thousands	From 30-01-2020 to current datetime	From 01-02-2020 to current datetime	English



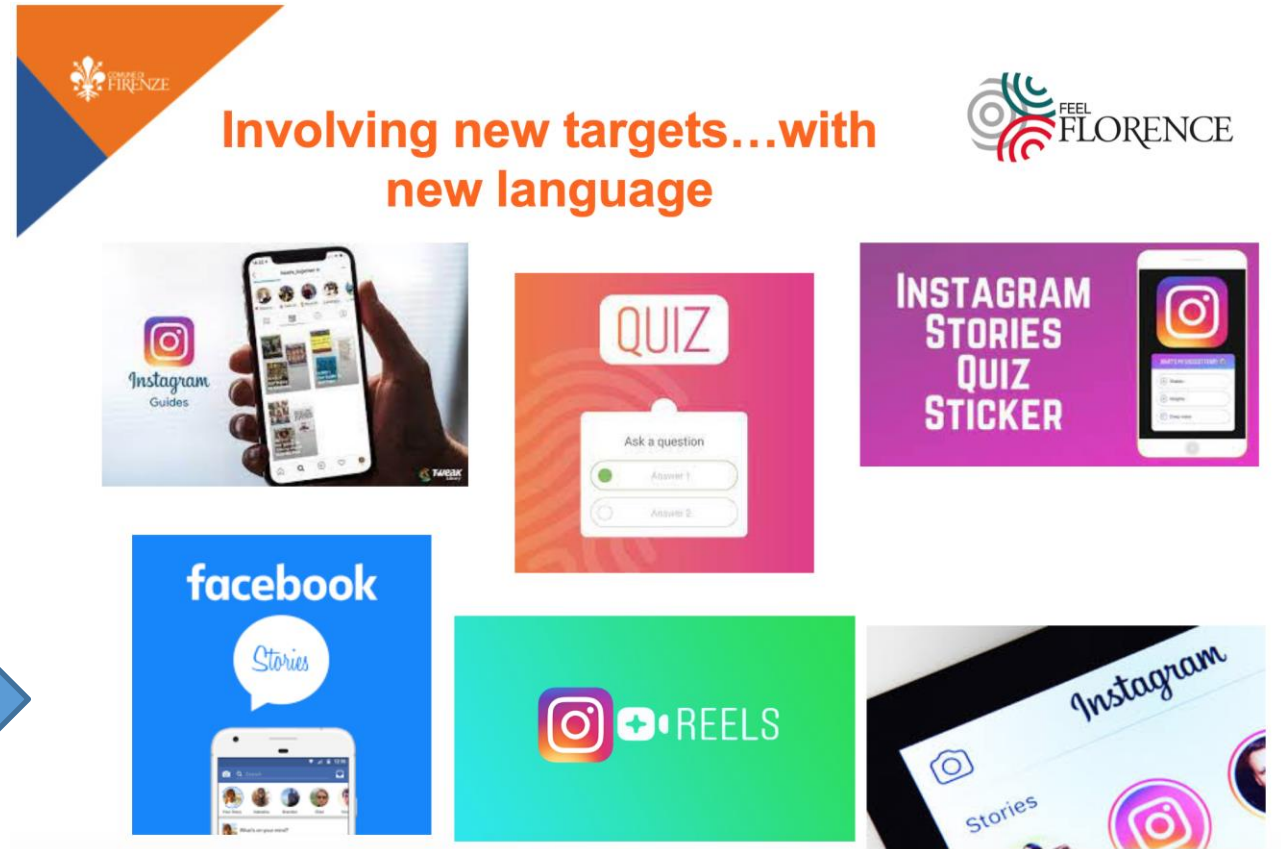
# Nudging



What is it?



How can you exploit it?



# Nudging



## TIMETABLE

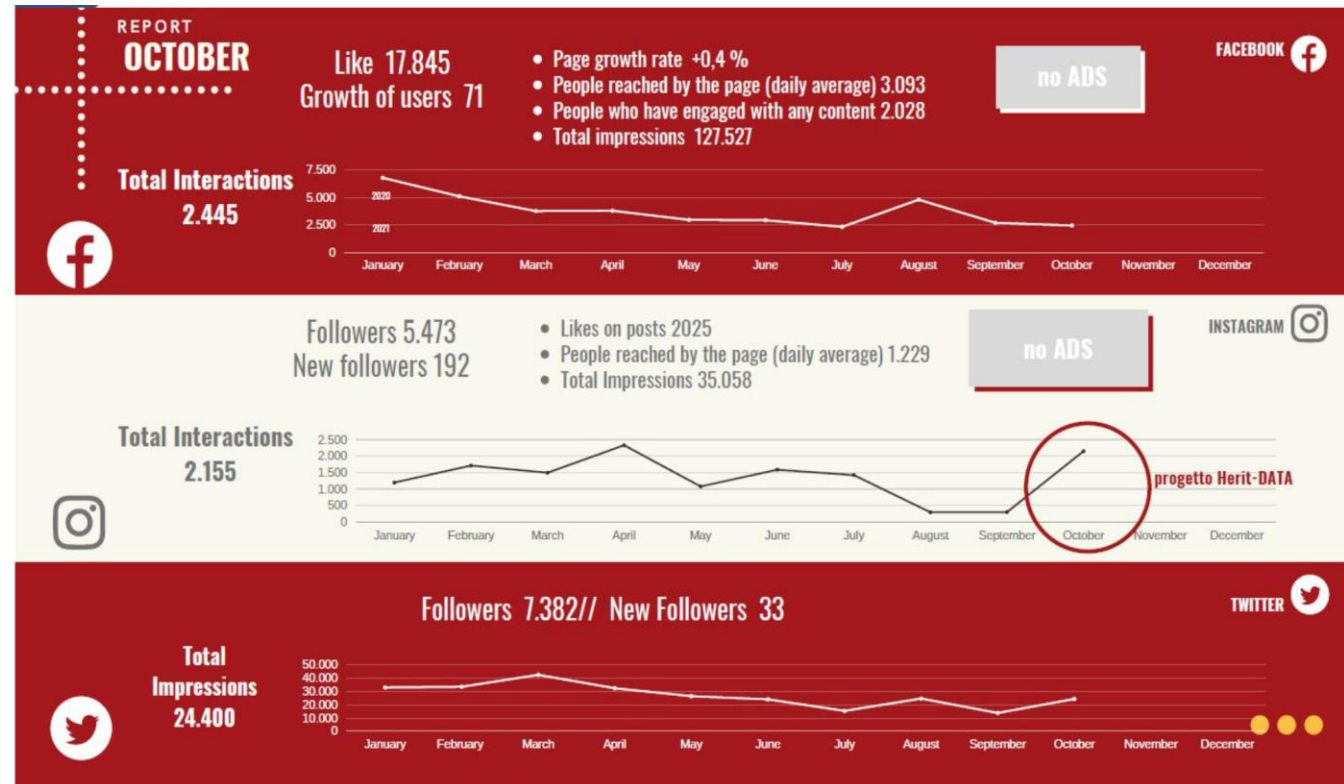


**Forte Belvedere: September 30**  
**Museo Novecento: October 5 and 19**  
**Museo Bardini: October 7 and 21**  
**Museo Bartali: October 12**  
**Cappella Brancacci: October 14**  
**Museo Santa Maria Novella: October 26**

**Tools: Instagram quiz**  
Questions with 3 different possible answers  
**Final question:**  
have you ever been there?

The strategy

The KPIs



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# Some recent acknowledgment

 **FRANCE**

City of Vers – Pont-du-Gard

7/7





The solution has been developed for Pont-du-Gard in the context of **HeritData** to monitor the old bridge with its people flow.

A number of different kinds of sensors for counting people and bikes have been connected to the Orion Context Broker by the Snap4City solution. The solution also integrates information regarding social media coming from Twitter. Thus, the Snap4City solution integrated both people and bike counts or flows and social media to provide a number of dashboards and business intelligence services. Dashboards allow the citizens and city operators to see

real time data and historical data through 3D diagrams or stacked diagrams. Some of the produced results are accessible to citizens and operators via public dashboards.

The Snap4City solution for Pont-du-Gard has been developed by [DISIT Lab](#) a FIWARE Gold member.


 **FIWARE**  
**FIWARE4CITIES / Ed. 3**

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## FIWARE4CITIES / Ed. 3


### Smart cities index


- **City of Vers – Pont-du-Gard**
- **City of Dubrovnik**

 **CROATIA**

City of Dubrovnik

1/1






The solution has been developed for Dubrovnik in the context of **HeritData** for monitoring the old city with regards to tourism and people flow. To this end, a number of TV cameras and other people counting sensors have been connected to the Orion Context Broker by the Snap4City solution.


The solution also integrates information regarding social media coming from Twitter.

By integrating people flow and social media data, Snap4City has been providing a number of dashboards and data processing services to the citizens.

Dashboards allow the city to see real time data combined with historical data with calendar heatmaps and staked diagrams. Some of the produced results are accessible to the citizens and operators via public dashboards.

The Snap4City solution for Dubrovnik has been developed by [DISIT Lab](#) which is a FIWARE Gold member, and it is hosted as a tenant on Snap4city.org service.



 **FIWARE**  
**FIWARE4CITIES / Ed. 3**

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# Future developments: Herit Data further and beyond



Events



and....

new data, sensors  
and features

TO COSMOS

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# FINAL THOUGHTS

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Start from the existing, be creative but pragmatic and always keeping in mind the long term sustainability.

Exploiting of new trends, tools and methodologies, but not forgetting the old ones.

A **Memorandum of Understanding** has being signed to adopt HERIT-DATA tools and methods to decrease the impact of mass tourism on cultural heritage sites, cities and monuments.....so let's keep it up!

## Contacts:

**Fondazione per la Ricerca e l'Innovazione**

[www.fondazionericercaunifi.it](http://www.fondazionericercaunifi.it)

[fondazionericerca@unifi.it](mailto:fondazionericerca@unifi.it)



<https://herit-data.interreg-med.eu/>

<https://www.snap4city.org/drupal/node/779>



# THANK YOU FOR YOUR ATTENTION!





# Herit Data project

Sustainable Heritage Management  
towards Mass Tourism Impact  
thanks to a holistic use of Big and  
Open Data



Regione Toscana



Fondazione per la ricerca  
e l'innovazione



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AND INTERNET  
TECHNOLOGIES LAB

