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http://www.impetus-project.eu

IMPETUS Project Deliverable: D8.3

Communication and dissemination report 2

Dissemination Status: Public

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The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

About IMPETUS

IMPETUS (Intelligent Management of Processes, Ethics and Technology for Urban Safety) is a Horizon 2020 Research and Innovation Project that provides city authorities with new means to improve the security of public spaces in smart cities, and so help protect citizens. It delivers an advanced, technology-based solution that helps operational personnel, based on data gathered from multiple sources, to work closely with each other and with state-of-the art tools to detect threats and make well-informed decisions about how to deal with them.

IMPETUS provides a solution that brings together:

- *Technology*: leverage the power of Internet of Things, Artificial Intelligence and Big Data to provide powerful tools that help operational personnel manage physical and cyber security in smart cities.
- *Ethics*: Balance potentially conflicting needs to collect, transform and share large amounts of data with the imperative of ensuring protection of data privacy and respect for other ethical concerns - all in the context of ensuring benefits to society.
- *Processes*: Define the steps that operational personnel must take, and the assessments they need to make, for effective decision making and coordination - fully aligned with their individual context and the powerful support offered by the technology.

Technological results are complemented by a set of practitioner's guides providing guidelines, documentation and training materials in the areas of operations, ethical/legal issues and cybersecurity.

IMPETUS places great emphasis on taking full and proper account of ethical and legal issues. This is reflected in the way project work is carried out, the nature of the project's results and the restrictions imposed on their use, and the inclusion of external advisors on these issues in project management.

The cities of Oslo (Norway) and Padova (Italy) have been selected as the site of practical trials of the IMPETUS solution during the project lifetime, but the longer-term goal is to achieve adoption much more widely.

The work is carried out by a consortium of 16 partners from 11 different EU Member States and Associated Countries. It brings together 5 research institutions, 6 specialist industrial and SME companies, 3 NGOs and 2 local government authorities (the trial sites). The consortium is complemented by the Community of Safe and Secure Cities (COSSEC) – a group established by the project to provide feedback on the IMPETUS solution as it is being developed and tested.

The project started in September 2020 with a planned duration of 30 months.

For more information

Project website: https://www.impetus-project.eu/
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Executive Summary

This deliverable reports about the further progress in implementing the IMPETUS communication and dissemination plan. Actions, target audiences and dissemination activities are described, as well as usage of planned communication channels to communicate project activities, such as the IMPETUS website, Twitter, LinkedIn and YouTube accounts, newsletters, brochures, press releases, flyers, videos, COSSEC and other networks and forms of cooperation. The project has made significant progress in the second reporting period, and the communication about the project and its outcomes has continued to work well in the IMPETUS Project. Dissemination of project results has mainly occurred through several webinars, workshops and conference presentations, with some journal publications and magazine articles.

This report focuses on analysis of the efficiency of communication channels, and reports on progress with respect to communication and dissemination activities and changes from the first reporting period to the second reporting period of the IMPETUS project. We have shown that the social media channels have reached a large contingent of our target audience, particularly those in engineering, business development, education, program and project management, as well as research, with those in business development, research and program and project management actively following the project. A development from the first reporting period of the project compared to the second is that those in engineering and business development have gained a keen interest in the IMPETUS project's events, accounting for 50% of visitors (engineers and business developers) and 26.8% of followers (business developers). The higher education/academia sector remains the highest contingent of visitors and followers from the first to the second reporting period of the project. We have also shown that the IMPETUS project has an international following with LinkedIn members from across the globe. Given that majority of followers are from Italy, Spain and Norway, we can conclude that members participating from the pilot cities of Oslo (Norway) and Padova (Italy) predominated the membership cohort for these two countries. The LinkedIn and Twitter sites have effectively been used to reach and communicate to members, partners and target groups. Moreover, these sites have allowed us to *interact with* visitors and followers in the target groups through following their LinkedIn pages and Twitter handles by reacting to and resharing/retweeting their posts.

The natural move from predominantly virtual meetings and events to more physical/in-person events, as travel restrictions and COVID-19 have eased, has stimulated the social media presence and increased the social media following. There were increases in interest on social media in the week ahead and in the week that followed the in-person, live events that took place in the project. A large contingent of our followers on LinkedIn were actively involved in reacting to and sharing posts on LinkedIn.

As outlined in D8.1, our strategy for the second reporting period of the project was to: post on social media channels more frequently to widen the scope of the target audience; broaden the following on the communication channels; and raise interest for the project's results. We can conclude that this strategy has worked since the number of visitors (LinkedIn), followers (LinkedIn and Twitter), retweets (Twitter), likes (LinkedIn, Twitter and YouTube) and subscribers (YouTube) has increased since October 2021.

After the first IMPETUS Project Review we sought to improve our communication and dissemination by further engaging COSSEC members and other external collaborators. We were largely successful in this, increasing COSSEC's membership and engagement, and generally increasing external collaboration. We have increased our COSSEC (Community of Safe and Secure Cities) membership. As of January 2023, COSSEC has 47 members. Collaborations with other projects, e.g. Snap4City, Secu4All, facilitated greater exposure for the project, as well as communication and dissemination of project outcomes through the various conferences, workshops and webinars. We have enhanced the participation of COSSEC members in validation of the IMPETUS solutions by involving them directly in project activities (e.g., plenary meetings, workshops, acceptance pilots, live exercise events, and the IMPETUS Final Dissemination Event).

The website was used to host an online survey to obtain feedback from relevant stakeholders on their views and concerns about smart city technologies. Preliminary results were presented on a video hosted on the IMPETUS website's YouTube Channel (an example of a communication channel strategy) that was taken at the CBI TIEMS Conference (an example of a dissemination channel).

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Our dissemination outputs for the second reporting period have grown significantly, with 2 more newsletters, 10 magazine articles, 7 interviews and appearances, 10 academic lectures and seminars, 3 brochures, 55 conferences, workshops and webinars, 8 conference proceedings and 3 published peer-reviewed Open Access articles in scientific journals. There are 3 additional articles that are in preparation and will be submitted to a scientific journal for peer review soon. We have also hosted and/or participated in 9 events for IMPETUS.

While contact information was readily available on the IMPETUS website and Twitter and LinkedIn both offering direct messaging to the contact person, these channels were not used by the general public to get further information on the project.

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List of Abbreviations

Table 1: List of Abbreviations

Abbreviation	Explanation
AP	Acceptance pilot
COSSEC	COmmunity of Safe and SEcure cities
D8.1	Communication and dissemination plan
D8.2	Communication and dissemination report 1
D8.5	External collaboration report
DoA	Description of the Action
FAQ	Frequently Asked Questions
KER	Key Exploitable Result
P2P	Project to Policy

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1 About this deliverable

1.1 Why would I want to read this deliverable?

This document contains the second report on IMPETUS communication activities, audiences, messages, feedback and procedures. It includes detailed information on the project partners' activities in the second reporting period (November 2021 to February 2023), and the final outcomes regarding publications and participation in events. Where applicable, the report also identifies the target audiences addressed by particular communication activities.

In addition to reporting communication and dissemination activities since the last report (D8.2), this deliverable reflects upon the effectiveness of these activities, including addressing shortcomings of the communication and dissemination strategy and where improvements might be made in applying the strategy to future work.

1.2 Intended readership/users

This deliverable is for public use. The intention of this document is to acquaint both IMPETUS partners and the wider audience with communication and dissemination achievements in the project's second reporting period.

1.3 Related Deliverables

IMPETUS Deliverables referred to in this Deliverable are:

- Deliverable 3.4 Tool Development Final Report (https://www.impetus-project.eu/images/Deliverables/Deliverable_34.pdf) - this document describes the tools developed as part of the IMPETUS solution.
- Deliverable 8.2: Communication and dissemination report 1 (https://www.impetus-project.eu/images/Deliverables/Deliverable_82.pdf) - this is the predecessor to D8.2, reporting the communication and dissemination activities in the first reporting period
- Deliverable 8.5: External Collaboration Report (https://impetus-project.eu/index.php/impetus-outputs/deliverables) - this report describes details of COSSEC activities and the activities associated with our various external collaborators.

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2 Communication report

This Deliverable contains:

1. Communication actions performed during the project's second reporting period, following activities reported in D8.2.
2. Analytics associated with the project's website and social media, as well as assessment of communication's key performance indicators.

2.1 Website

The IMPETUS website (https://impetus-project.eu/index.php) regularly informs site visitors about the latest external/public news about the IMPETUS project.

2.1.1 Changes to the website since D8.2

The website has been updated regularly since D8.2. Notable changes include:

1. The IMPETUS website 'Home' page includes a narrated slideshow presentation of the IMPETUS project in video format (more details in Chapter 1.9 of this Deliverable).
2. The IMPETUS Solution page was added as an 'Output' (https://impetus-project.eu/index.php/impetus-outputs/the-impetus-solution). This page lists the IMPETUS platform and nine tools, plus the Practitioners Guides, with links to short descriptions of them in html and pdf (1 page) formats in both English and Italian. A single pdf describing all elements of the IMPETUS Solution is also available.
3. 'Events' and 'News' were consolidated into one easily navigable webpage called 'News & Events'.
4. The project's general "Frequently Asked Questions (FAQs) has been regularly updated to reflect the latest information.
5. News stories now appear on their own webpage, instead of having a single webpage for all news items.
6. The 'Survey' page now has a 'main' page from which the visitor can follow a link to the survey in their preferred language by clicking on a flag. Visitors can also navigate directly to the survey in their preferred language by following drop-down lists off the menu.
7. The 'COSSEC Workshops' page was removed. Rather than using an online platform, COSSEC members have been meeting at the face-to-face events to which they were formally invited.

2.1.2 News and events webpage updates

Regular updates have been made through the 'News & Events' page (https://impetus-project.eu/index.php/news) on the IMPETUS website and the 'Updates' panel on the homepage, which alerts readers to the activities, events and achievements of the project. The 'News & Events' page was recently overhauled to present an easily navigated collection of news and events notices in a three-column format, linked to individual pages in which the full story can be read. News webpages include text descriptions of events and images where available. All text is approved by the IMPETUS Project Coordinator and Project Officer. The 'News & Events' page currently has 14 news articles (latest update: 6 February 2023):

1. Final Dissemination Event – 30–31 January 2023
2. IMPETUS at TIEMS 2022 Hybrid Annual Conference – 17-21 October 2022
3. Live Exercise in Padova – 6 October 2022
4. Live Exercise in City of Oslo – 18 August 2022
5. IMPETUS at the 2nd ECSCI Workshop – 27 April 2022
6. IMPETUS plenary – Trondheim – 5-7 April 2022
7. Acceptance Pilot in Padova – 1-3 December 2021
8. First Acceptance Pilot in the City of Oslo – 3-5 November 2021
9. IMPETUS Day at the TIEMS 2021 Virtual Annual Conference – 9 December 2021
10. Smart Cities Disaster Response - The IMPETUS Project – 28 October 2021

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11. TIEMS/CBI focuses on IMPETUS – 28 October 2021
12. IMPETUS at the CERIS–FCT Workshop – 25 February 2021
13. TIEMS 2020 Annual Conference – 3 December 2020
14. IMPETUS virtual Kick-off Meeting – 1-3 September 2020

2.1.3 IMPETUS website analytics

Website and social media analytics were gathered from October 2021 to November 2022 to give us time to analyse the date for this report. Based on the number of hits obtained by each page on the website (refer to Table 2), the 'News & Events' page remains the most popular item on the website with the greatest number of hits (8521 hits as at 17 November 2022, up from 2059 in D8.2). The 'About IMPETUS' page remains the second most popular (4256 hits as at 17 November 2022, up from 1411 in D8.2) and followed by the 'IMPETUS Consortium' page (3766 hits as at 17 November 2022, up from 1200 in D8.2). Before combining the 'News' and 'Events' pages, 'Events' was the fourth most popular page on the IMPETUS website with 3173 hits (17 November 2022, up from 589 in D8.2). For the purposes of this report, metrics for 'Events' will be recorded as a single page since the amalgamation of 'News' and 'Events' was a recent occurrence (17 November 2022).

Table 2: Number of hits on each article on the IMPETUS website (as at 10 September 2021 and 17 November 2022). Cells shaded in blue represent articles no longer accessible by website visitors

Category	Article	Number of hits	
		D8.2 (10 September 2021)	Current (17 November 2022)
About IMPETUS			
	Project	1411	4256
	Consortium	1200	3766
	FAQs	12	99
Pilot Cities			
	Oslo	730	2268
	Padova	741	2271
COSSEC			
	About	1068	3148
	Workshops	647	1891
Outputs			
	Solutions	-	1074
	Deliverables	785	2361
	Publications	614	1950
	Newsletters	598	1744
	Press releases	619	1741
	Videos	558	1709
News & Events			
	News	2059	8521
	Events	589	3173
Survey			
	Main	-	99
English	Written consent form	120	649

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Category	Article	Number of hits	
		D8.2 (10 September 2021)	Current (17 November 2022)
	Information letter	134	702
Norwegian	Written consent form	126	478
	Information letter	101	714
Italian	Written consent form	136	439
	Information letter	114	471
Croatian	Written consent form	136	135
	Information letter	114	231
Contacts		796	2553

Note: Deliverable 8.1 Communication & Dissemination Plan, Chapter 6 (released in June 2021) indicated that "*The measurements of website indicators will be performed by Google analytics. Moreover, the possibilities of data about geographical distribution of the website visits and/or hits per page as well as distribution in time will be explored and included in the reports*" and is further explained in D8.2 (pg 10).

The increased number of hits on the 'Events' page follows from the online reports of the Live Exercises in Oslo and the two Acceptance Pilots in Oslo and Padova. These events in Oslo and again in Padova were significant in the project's timeline and culminated in the first face-to-face meetings of the entire IMPETUS project team. The online report of the Live exercise in Oslo, in particular, included several images that may be of interest to visitors to the site, indicating interest in these live events. Since individual webpages for each of the news items has now been instated, individual metrics can be recorded on each news item to assess which news items and/or events attract the highest readership.

No expressions of interest were expressed as inquiries from the IMPETUS website, visitors using the contact email address are available.

2.2 Social media

2.2.1 LinkedIn

The H2020 IMPETUS Project LinkedIn page is at https://www.linkedin.com/company/h2020-impetus.

LinkedIn is a professional network in which members can share their job profile and place of work. Members can follow LinkedIn pages from people, projects, and companies. Member privacy settings determine whether they share their own professional information. Moreover, geographical information is also shared with admins of professional pages (such as the H2020IMPETUSProject LinkedIn page) so that they can draw certain analytical profiles of followers and website visitors interested in the page, perhaps to tailor the content more towards those interested parties.

Here we look at the IMPETUS LinkedIn "visitor" and "follower" metrics. A visitor is someone who only looks at the profile page on LinkedIn and a follower clicks on the "+Follow" button to sign up to receive updates posted on the IMPETUS LinkedIn page.

2.2.1.1 Followers to the IMPETUS LinkedIn page

Since the IMPETUS LinkedIn page was activated on 1 October 2020, the IMPETUS LinkedIn page now has 117 followers, which is a substantial increase from the 17 followers in D8.2.

Figure 1 shows the new followers per day over the second reporting period of the project, since October 2021.

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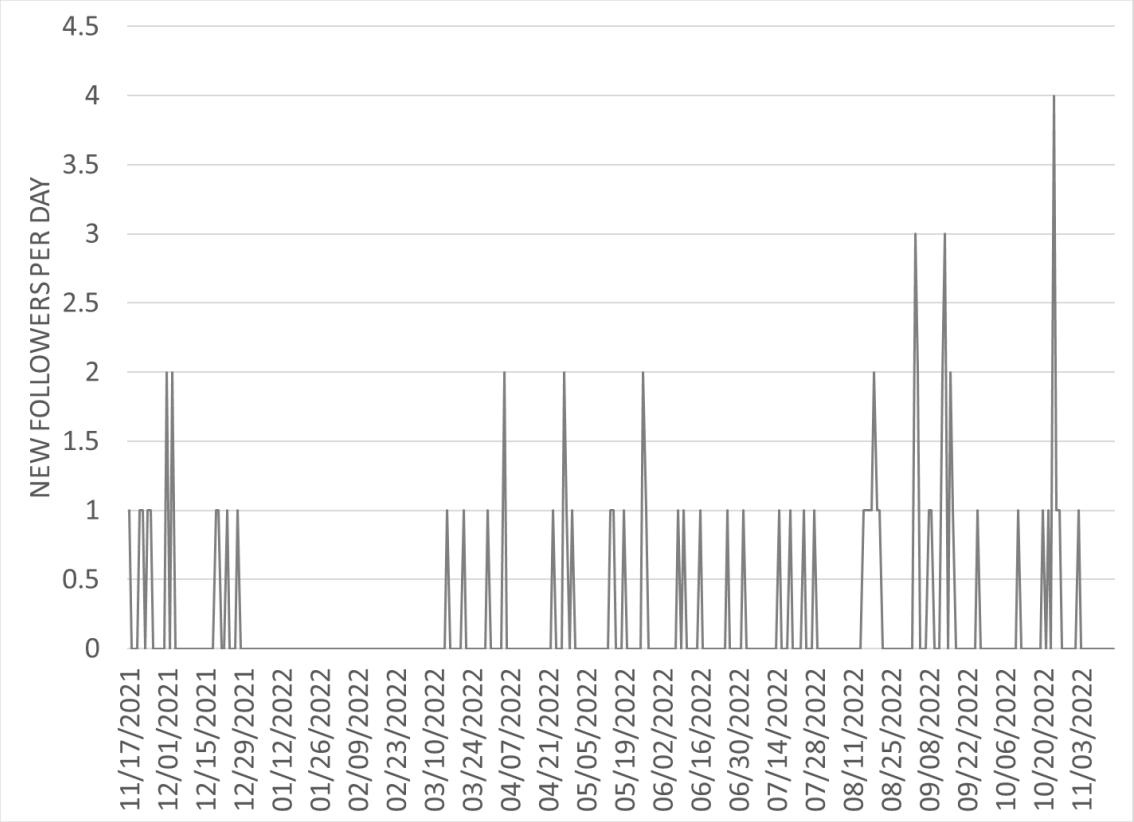

Figure 1: The number of new followers to the IMPETUS LinkedIn page for the second reporting period of the project (October 2021-November 2022)

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While most of the LinkedIn followers are from Europe (Figure 2), this past reporting period has seen followers from as far as UK, USA, Turkey, Australia and India. Most European followers are from Padova (Italy; 19.1%), Barcelona (Spain; 11.2%), Oslo (Norway; 11.2%), Bucharest (Romania; 6.7%) and Trondheim (Norway; 6.7%). There's been an increase in the number of followers from Oslo and Padova in the past reporting period, stimulated by IMPETUS hosting the Oslo and Padova Live Exercises and Acceptance Pilots. This increase in followers in these two metropolitan areas shows that there is a lot of interest in the project in these two cities beyond the people working directly on IMPETUS.

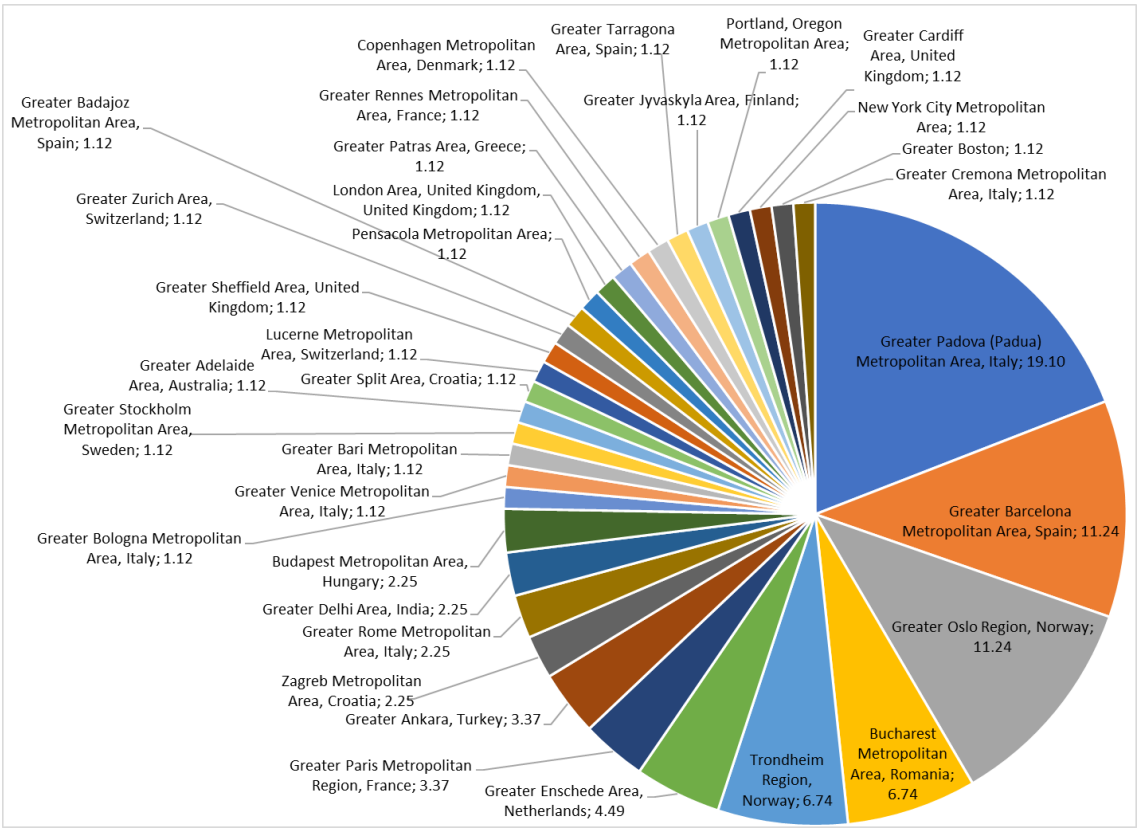

Figure 2: Geographical distribution (%) of IMPETUS LinkedIn followers from October 2021 to November 2022

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LinkedIn can show what the followers' job roles are at their place of employment. This information indicates whether we are reaching our target audiences. From the figure below (Figure 3), more people in business development have followed us on LinkedIn (17.4%) over the past reporting period, up from 7.4% in the previous reporting period. Followers in research (17.4%) have remained predominant throughout the project. The project page has also gained followers in information technology in the second reporting period (9.8%), up from 3.7% from the first reporting period of the project. Followers in program and project management (22.2%), education (8.7%), engineering (8.7%) and sales (6.5%) have also predominated in the second reporting period.

As the IMPETUS tools are coming to fruition, there appears to more interest from business developers and those in IT in the news and outputs of the IMPETUS project through the LinkedIn page. The interest of individuals in these particular areas is welcome, these are the people most likely to take up the IMPETUS solution once the tools have been finalised.

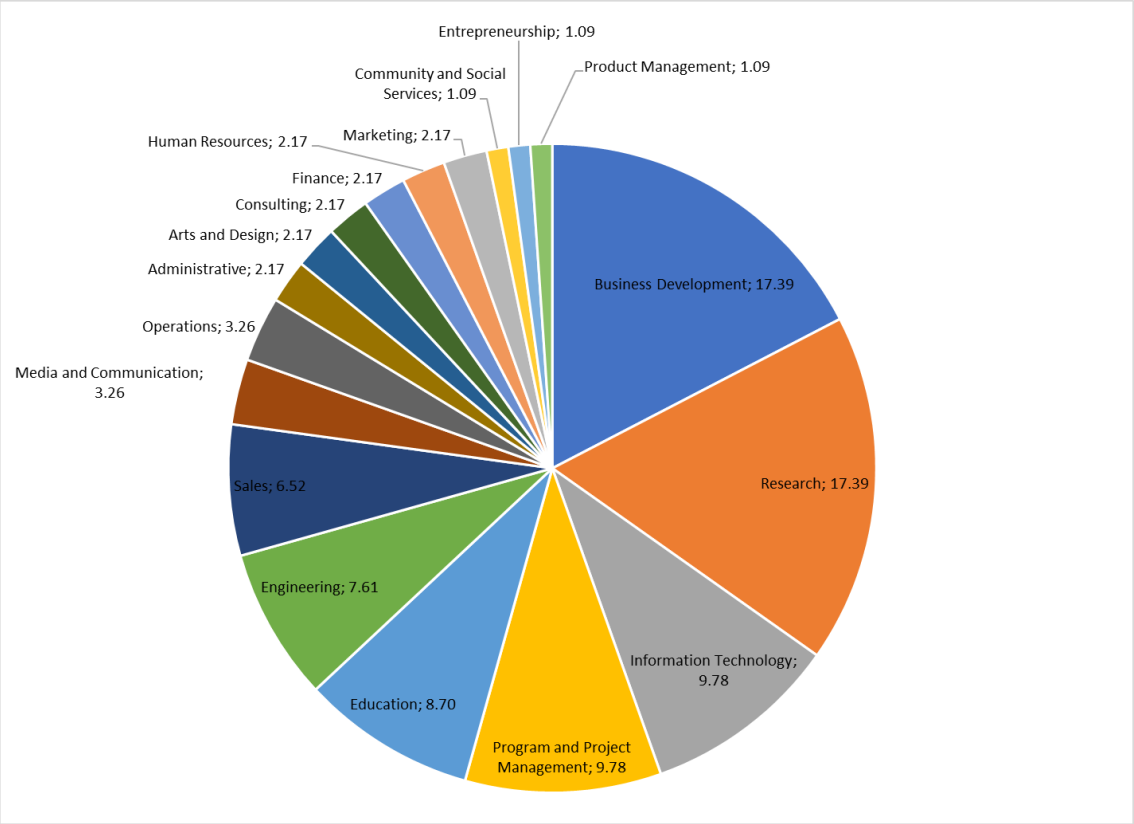

Figure 3: Job function/description (%) of IMPETUS LinkedIn followers from October 2021 to November 2022

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From the LinkedIn analytics, we are also able to see the line of industry that LinkedIn followers are in (Figure 4). Those in higher education make up the largest contingent with 15.5%, which is closely followed by the next largest contingent in research services (12.1%) and government administration (10.3%). Followers in IT also represent some 7.8% of our followers.

In the second reporting period, there have been followers from 46 different industries, which include law enforcement, public safety, media and communications, infrastructure development and maintenance, data management, real estate, air and road transportation, finance, biotechnology research, healthcare, non-profit organisations, etc.

This was similar to the set of industries represented by followers in the first reporting period of the project.

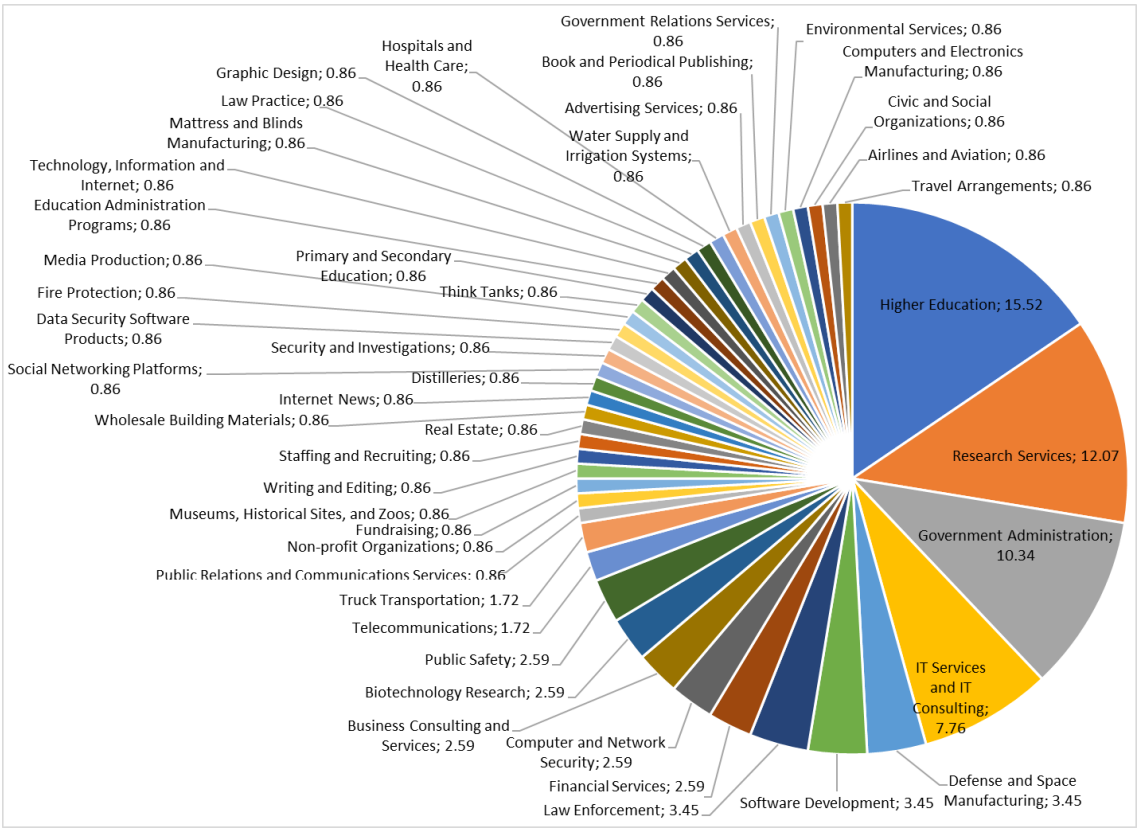

Figure 4: Area of industry of IMPETUS LinkedIn followers (%) from October 2021 to November 2022

Those members who are in higher education and research reflect members who are at universities and research organisations that are currently also active in the project. Those followers who are in government administration are likely city officials, possibly in Oslo and Padova, who follow the project on LinkedIn. Those in IT are likely to be LinkedIn members who are involved in cyber security frameworks (and other communication and technology service facets) within the IMPETUS project. As many of the tools in the IMPETUS solution were devised by people in higher education and research institutions, as well as network security businesses, it stands to reason that IMPETUS LinkedIn followers are well represented in these lines of work (similar to the first reporting period of the project). Of note is the increase in followers in law enforcement, public safety and public relations/communication, which may be attributed to their strong presence in the partner cities and COSSEC at the live exercises and acceptance pilots.

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2.2.1.2 Visitors to the IMPETUS LinkedIn page

There have been 690 page views in the second reporting period, with 285 unique visitors. The figure below (Figure 5) shows the number of views in total and unique visitors to the LinkedIn page per day over the second period of the project.

Total page views follow similar trends to total unique visitors since visitors to the site would return to read, like, and share the posts on LinkedIn. Sharing posts will encourage new unique visitors to view the page, and they would in turn follow the site for more updates. An increase in the number of followers in August–December 2022 (Figure 1) shows that there was more interest in the project during this time.

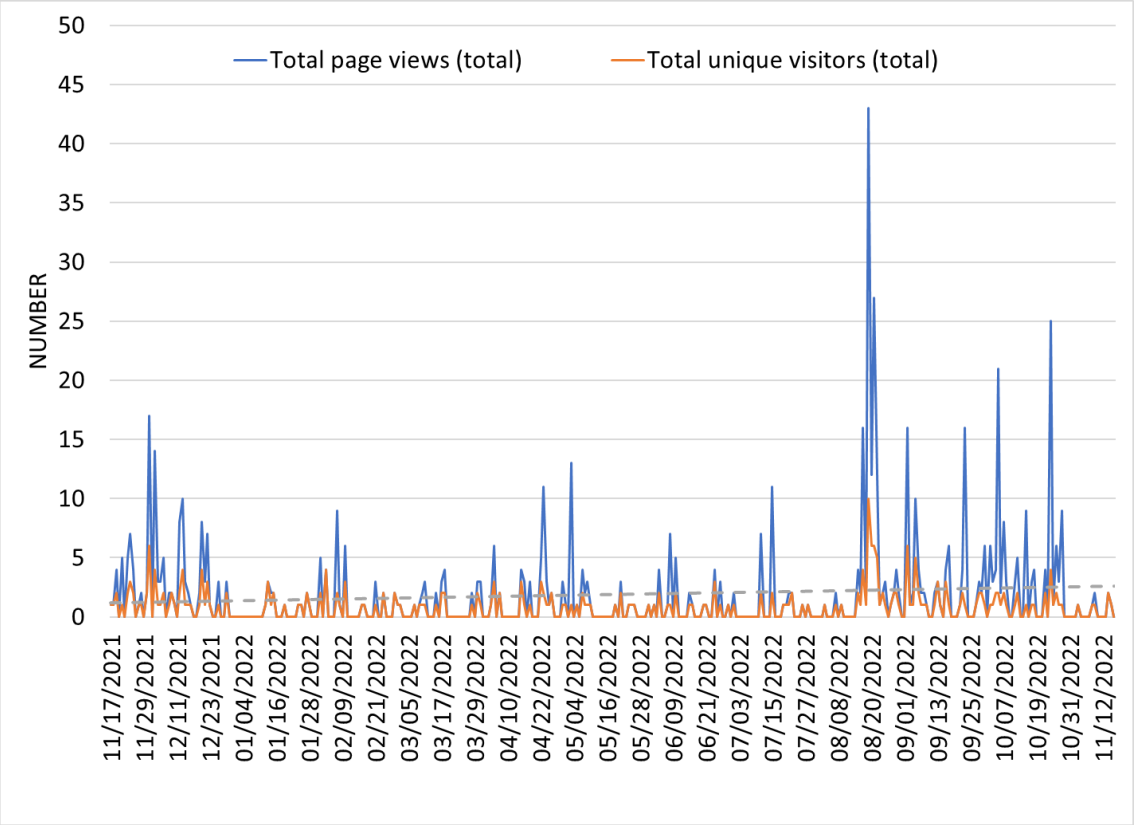

Figure 5: The number of page views and unique visitors to the IMPETUS LinkedIn page for the second reporting period of the project (October 2021 to November 2022)

The number of visitors and page views increases when news items are posted on LinkedIn, most notably in November and December 2021 shortly after the Acceptance Pilots, April 2022 around the time of the ECSCI workshop and, intermittently, between August and October 2022 leading up to and following the Live Exercises in Oslo and Padova, respectively.

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The most interest has been from visitors in the Netherlands (26.5%), which is different from the first reporting period of the project, followed by visitors from Italy (20.5%), Norway (19.0%) and Spain (12.0%) (Figure 6). The interest from Norway and Italy are due to a large contingent of IMPETUS project members who are based in Oslo and Padova. The large contingents of visitors hailing from the Netherlands and Spain could be interest from our COSSEC members in in those two cities. Visitors were mostly based in Europe, with 4.3% of views from visitors based in the United Kingdom and 2.5% in the United States.

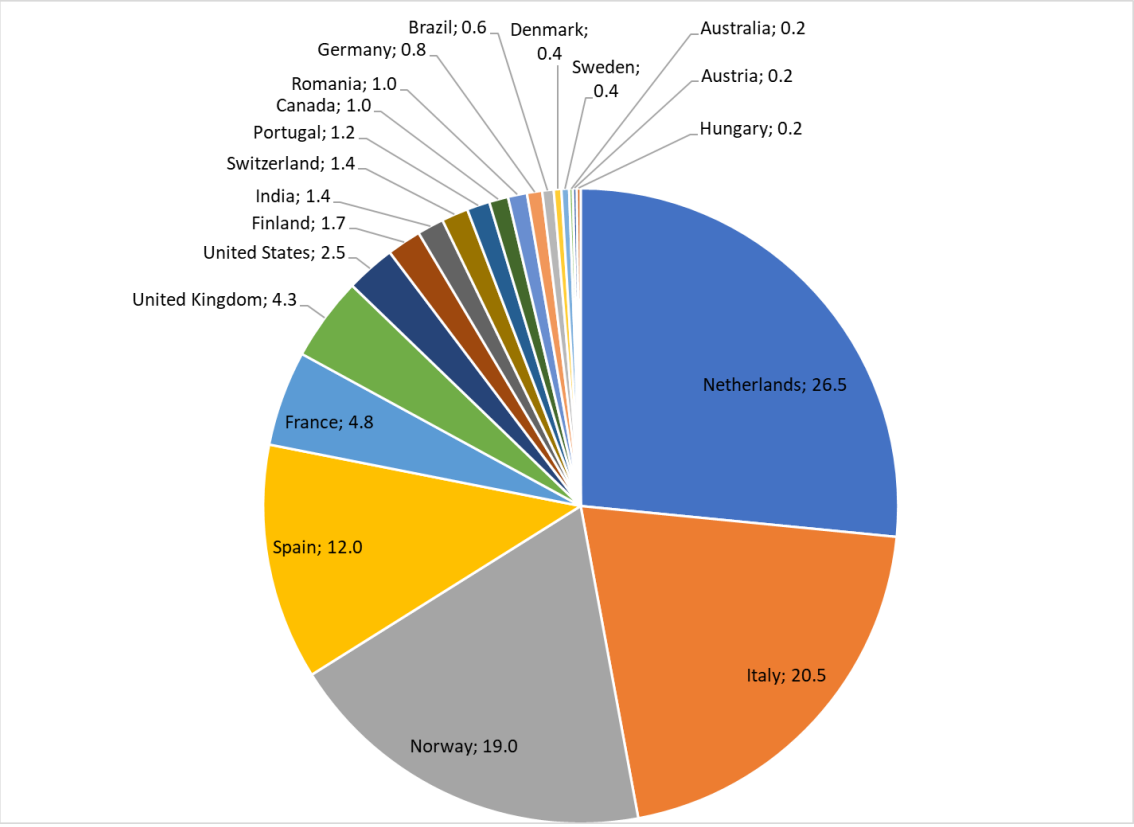

Figure 6: Geographical distribution (%) of IMPETUS LinkedIn visitors from October 2021 to November 2022

Visitors to the LinkedIn page were similar in job function (Figure 7) and industry (Figure 8), compared to the actual LinkedIn followers, however the there was more interest by people in certain areas of industry in the project owing to the fact that they visited the page more often or shared it with their counterparts in the same/similar industry.

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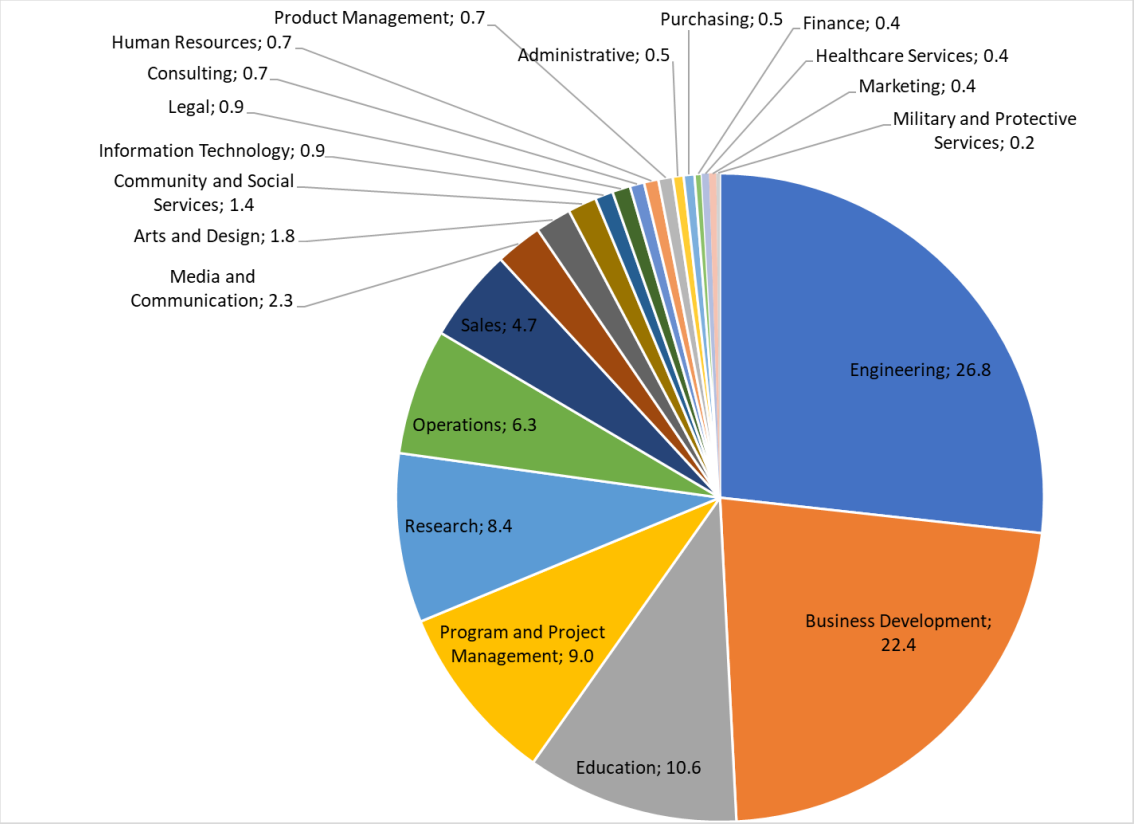

Figure 7: Job function/description (%) of IMPETUS LinkedIn visitors from October 2021 to November 2022

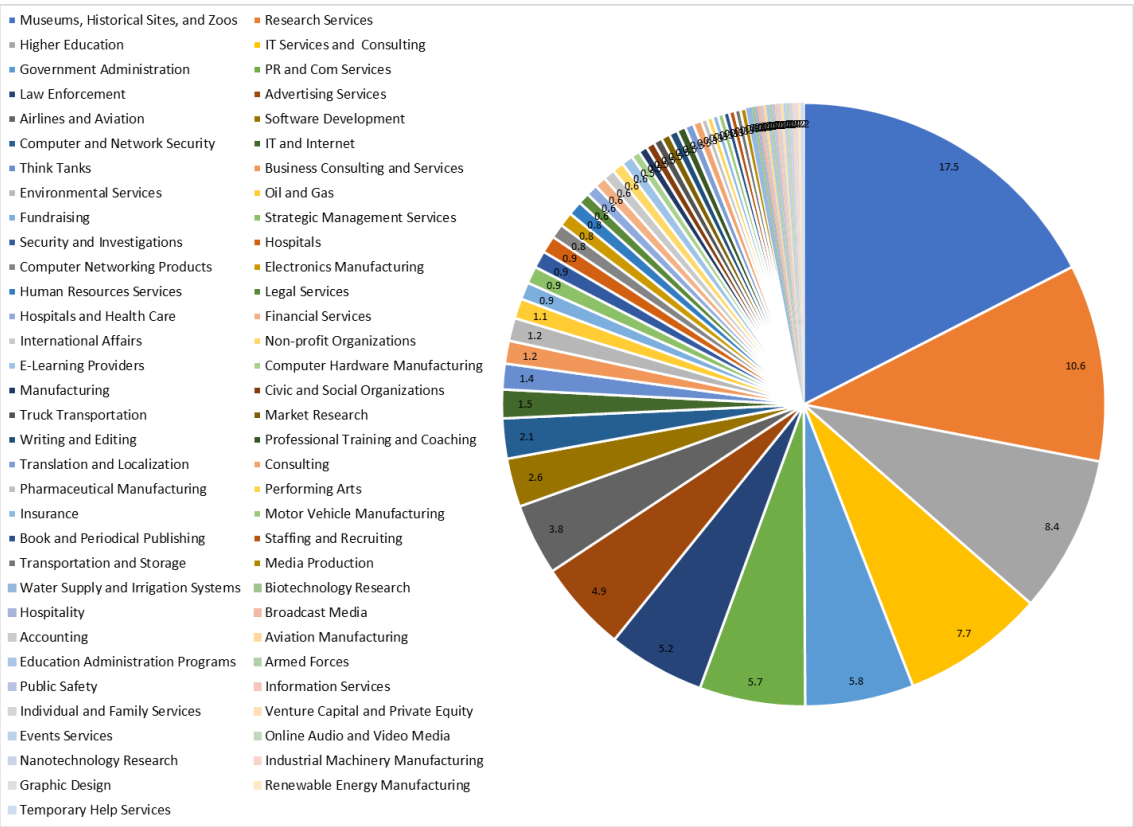

Figure 8: Area of industry of IMPETUS LinkedIn visitors (%) from October 2021 to November 2022

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Engineers (26.8%; Figure 7) visited the page more often, but did not click on the "Follow" button as often as those in business development (22.4%; Figure 3) who more frequently followed the LinkedIn page (17.4%). Those in IT and research tended to follow the LinkedIn page, but there were fewer overall visits by people with those job descriptions. Considering the area of expertise that project members are in, we would expect that the area of industry dominating the LinkedIn visitors would be those in engineering, business development and IT. Those in education, program and project management and sales were equally interested in the LinkedIn news as the same proportion of people in those lines of work both visited (Figure 7) and followed (Figure 3) the page.

Those in the museum, historical site, and zoo industries showed a keen interest in the project since they were repeat visitors to the site (17.5%; Figure 8) but did not necessarily show a keen interest in signing up to follow the IMPETUS LinkedIn news and updates (0.86%; Figure 4). Government administration and law enforcement personnel also visited the site more frequently (Figure 8) but showed little interest in following IMPETUS LinkedIn news and updates (Figure 4). Those in government administration and law enforcement visited the site and were target audiences owing to their involvement in the live exercises and acceptance pilots; however, because they did not follow the page but merely visited, their interest was probably limited to the time that the live exercises and acceptance pilots took place.

2.2.1.3 Interactions with posts on LinkedIn

During the second reporting period, all of the posts on the IMPETUS Project LinkedIn page have been clicked on and opened 566 times, and received 1 comment, 192 reactions ("likes", "loves", "applaudes", etc) and 29 reposts from the 132 followers.

2.2.1.4 Remarks

Despite the followers, likes/reactions, views and visitors to our LinkedIn page, no-one reached out to us directly through LinkedIn. There were increases in interest on social media in the week ahead and in the week that followed the in-person, live events that took place in the project. A large contingent (~30%) of our followers on LinkedIn were actively involved in reacting to and sharing posts on LinkedIn. LinkedIn did however offer the greatest exposure for IMPETUS to an audience that encompassed both project members (and their connections), attendees to in-person events (and their connections), interested parties and the public in general.

2.2.2 Twitter

The H2020 IMPETUS Project Twitter page is at https://twitter.com/H2020Impetus.

Twitter analytics shows that in the second reporting period, there have been 36 tweets, 11 retweets and 12 likes/reactions. The Twitter page has 38 followers and 13 following (active followers) as of 18 November 2022 (Table 3). There have been 4162 visits to the IMPETUS Twitter page, with 1932 Twitter "Impressions". A Twitter impression is a tally of all the times the page has been seen, including hits in search results and views on a follower's Twitter feed. Since the first reporting period of the project, the number of tweets has tripled, which is reflected in the three-fold increase in followers and visits to the page. There's been an uptake in tagging of the IMPETUS Twitter handle with 17 mentions in this second reporting period of the project. Followers mention the IMPETUS project Twitter handle (@H2020Impetus) when they share news of major events that have happened in the project in the second reporting period, specifically the webinar that the IMPETUS project hosted on Smart City Disaster Response (Oct 2021; 3 mentions), Padova Acceptance Pilot simulation (Jan 2022; 4 mentions), Oslo Live Exercise (Aug 2022; 3 mentions) and the Padova Live Exercise (Sep 2022; 4 mentions).

The post on the webinar on Smart City Disaster Response garnered the most interest (2 likes, 1 retweet; Oct 2021). Also, both Live Exercises in Oslo and Padova in Aug and Sep 2022 accrued the most likes, retweets and mentions.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Despite the tweets, retweets, likes, visits, followers and mentions on Twitter, no-one reached out to us directly via Twitter. Twitter did however enhance our exposure to a wider audience that encompassed both project members (and their connections), attendees to in-person events (and their connections) and the public in general.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Table 3: Analytics of IMPETUS Twitter page (as of 18 November 2022)

Category	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Total
Tweets	1	6	7	4	3	5	1	1	2	0	0	4	2	36
Retweets	1	4	2	1	0	0	1	0	0	0	0	2	0	11
Likes	2	1	4	0	0	0	1	0	1	0	0	3	0	12
Tweet impressions	130	225	299	127	123	130	208	61	187	4	34	183	221	1932
Profile visits	63	620	680	418	138	484	310	138	729	13	60	272	237	4162
Mentions	3	1	0	4	0	1	1	0	0	0	3	4	0	17
New followers	4	1	0	1	2	2	0	0	1	1	1	1	1	15
Top Tweet	Impetus webinar on Smart City Disaster Response	Impetus webinar on Smart City Disaster Response video	Acceptance pilot (Padova) notice	Padova AP simulation	Newsletter 2 announce-ment	Deliverable 3.1 notice	Trondheim plenary session	Joe Gorman talk at ECSCI workshop	Impetus slideshow presentation	Impetus slideshow presentation	-	Oslo LiveEx news update	Padova LiveEx news update	
Top follower	@Resiloc	@riniceru	-	@PRECIN CT_EU	@BuildER S_EU	@frontsh1	-	-	@RiskPacc	@TAPAS_ SESAR_ER 4	@ASPRID Project	@Majy uam	@PreceptPr oject	
Top follower association	Resiloc	Unknown	-	PRECINCT	BuildERS	FRONTSH 1P	-	-	RiskPACC EU Project	TAPAS Project	ASPRID Project	Majyua	PRECEPT PROJECT	

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.3 Interviews, appearances and publications for general media

Since the beginning of the project, we have had the opportunity to engage with journalists for interviews and appearances:

1. Joachim Levy. see how Joe Levy, CEO & Founder of 1702ai uses MATLAB Computer Vision Toolbox and Deep Learning Toolbox to detect real time threats! 1 Feb 2021. https://www.youtube.com/watch?v=LTxn9PYHaX8.
2. Joachim Levy. SAMSON gun detection. 10 Apr 2021. IPVM.com New Products Show April 2021
3. Zubina Ahmed. 1720ai: AI video platform that detects weapons in real-time. 7 Jun 2021. Khaleej Times. https://www.khaleejtimes.com/uae/1720ai-ai-video-platform-that-detects-weapons-in-real-time.
4. Paolo Mocellin. Managing complex evacuations. 02 Dec 2021. Interview with Journalist in Padova
5. Calev Myers. Preventing the next mass shooting. 24 May 2022. https://www.youtube.com/watch?v=D_SsBTNryXc&t=1s.
6. George Mathisen (Journalist) interviewing Osman Ibrahim & Joe Gorman. Forsker på nye verktøy for tryggere by (Researching new tools for a safer city) 29 Jul 2022. Aktuell Sikkerhet (Security Today)

Here is a list of articles that have been published in media for the general public and for special interest magazines.

1. Gil Press. The Thriving AI Landscape In Israel And What It Means For Global AI Competition. 24 Sep 2018. https://www.forbes.com/sites/gilpress/2018/09/24/the-thriving-ai-landscape-in-israel-and-what-it-means-for-global-ai-competition/?sh=6e8d157430c5.
2. Marc Jacob. We are an extra pair of eyes for your Video Management System. 19 Aug 2019. https://www.globalsecuritymag.fr/Joachim-Levy-CEO-at-1702ai-We-are,20190813,89870.html.
3. Gilles Fontaine. Université, armée, grands groupes et startups, comment Isra. (French) 24 Nov 2019. https://www.challenges.fr/.
4. Hub71 chooses startups for third cohort. 2 Nov 2020. https://www.wamda.com/2020/11/hub71-chooses-startups-cohort
5. Abu Dhabi tech start-up hub sees rise in female entrepreneurs. 7 Nov 2020. https://www.arabianbusiness.com/startup/454016-abu-dhabi-tech-start-up-hub-sees-rise-in-female-entrepreneurs.
6. Yuliya Sychikova. Weapon Detection with AI. 17 Dec 2020. https://datarootlabs.com/blog/1702ai-co-founders-joachim-levy-and-keren-levy-bildi-weapon-detection-with-ai.
7. Chris Wright. Lights, camers, weapons, detection! Jan 2021. Wired Middle East.
8. AI-equipped surveillance cameras that detect guns and weapons: To prevent terrorism and robbery (Japanese). 18 Jume 2021. https://news.yahoo.co.jp/byline/satohitoshi/20210618-00243301.
9. Bart Van Teeffelen. No weapon escapes 1702ais ai samson software. 19 Nov 2021.
10. Jelena Radošević, Krunoslav Katić. Uloga i etičnost pametnih tehnologija u pametnim gradovima - što građani Europe o tome misle? (The role and ethics of smart technologies in smart cities - what do European citizens think about it?) (Croatian). 01 Oct 2022. Zastita. https://zastita.info/hr/casopis/aktualni-broj/
11. 銃や武器を検知するAI搭載の監視カメラ：テロや強盗を未然に防ぐために (AI-equipped surveillance cameras that detect guns and weapons: To prevent terrorism and robbery), https://news.yahoo.co.jp/, June 18th 2021
12. Evan Rise (Journalist) reporting on Live Exercise in Oslo. 16 nasjoner fulgte live-øvelse på rådhusrt (16 countries observed live exercise at Oslo City Hall). 01 Sep 2022. Aktuell Sikkerhet (Security Today).

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.4 Newsletters

The second newsletter was released in February 2022 (https://www.impetus-project.eu/images/Newsletters/Newsletter_02.pdf). Newsletter Issue 2 featured accounts of the Oslo and Padova Acceptance Pilots, and featured Q&A reports from project participants from Oslo and Padova, on getting to know the IMPETUS partners and their overall experience of conducting the trials. A brief report on the IMPETUS Day at the TIEMS 2021 Virtual Annual Conference held on 9 December 2021 was also featured. Like Newsletter Issue 1, a round-up of COSSEC was included in Issue 2. A brief report of news (with links to the website) and forthcoming events concluded Issue 2.

The third newsletter was released in December 2022 (https://impetus-project.eu/images/Newsletters/Newsletter_03.pdf). Newsletter Issue 3 featured accounts of the Live Exercises in Oslo and Padova. In Issue 3, there was also a feature of the IMPETUS Solution, a round-up of COSSEC and a tribute to Snezana Knezic, the Communication and Dissemination Manager, who passed away during the course of the second reporting period of the project. The newsletter also included brief reports of news events of the IMPETUS Plenary in Trondheim and participation of IMPETUS in the 2nd ECSCI Workshop on Critical Infrastructure Protection (with links to the website), as well as forthcoming events at the time in the project.

2.5 Brochures

There were three brochures that were created as part of the IMPETUS communication strategy:

1. December 2020: A FAQ brochure in pdf format was produced and is available at: https://impetus-project.eu/images/Deliverables/IMPETUS_FAQ_2110.pdf.
2. October 2021: A special printed flyer (Figure 9) was created for physical distribution at conferences, Acceptance Pilots and Live Exercises, as well as other occasions and events where the IMPETUS project is involved.
3. January 2023: A 16-page “Results Booklet” was produced, containing a 1-page summary of each key project result, and information about availability and future plans. It was produced to be given to participants at the Final Dissemination event in Rotterdam, but is suitable for wider distribution.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Figure 9: The content (a) and appearance (b) of the IMPETUS flyer for distribution at conferences and all in-person events

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

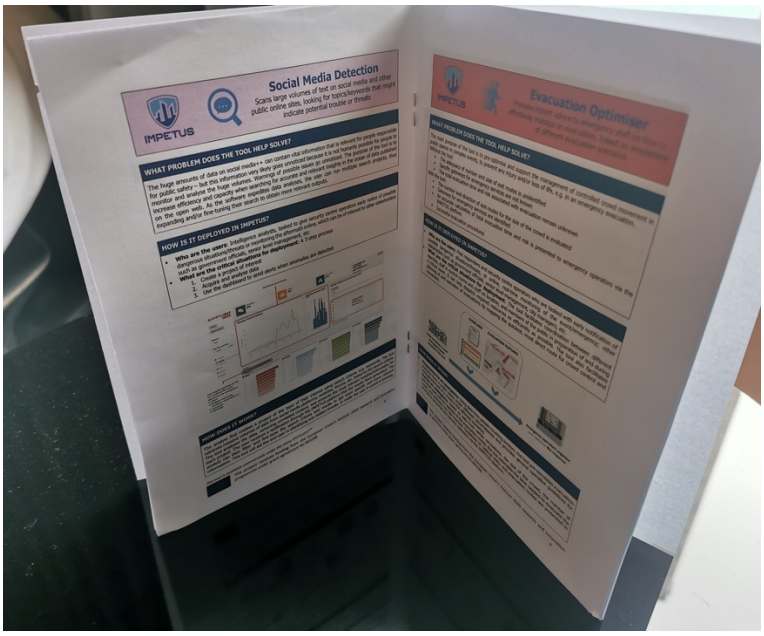


Figure 10: The IMPETUS brochure that was distributed at the Final Dissemination event in Rotterdam

2.6 Academic lectures and seminars

IMPETUS results were incorporated in several academic courses over the course of the project:

1. Claudio Ardagna, Marco Anisetti. General information about IMPETUS, WP4. 6 Jun 2021. PhD Course on Governance, Risk, Compliance in Distributed Systems @ Università degli Studi di Milan
2. Claudio Ardagna, Marco Anisetti. General information about IMPETUS, WP4. 10 Jun 2021. Advanced Course on Big Data, AI, Platforms at Università degli Studi di Milano.
3. Claudio Ardagna, Marco Anisetti. Data Analysis & Data Management. December 2021. PhD Program at Università degli Studi di Milan.
4. Claudio Ardagna. Algorithms for massive data analysis, cloud and distributed computing. 1 Feb 2022. Master's Program at Università degli Studi di Milan
5. Claudio Ardagna. Lesson 3.2: Data Governance. Mar 2022. Master's Program at Università degli Studi di Milan
6. Claudio Ardagna. Advanced course on Big Data, AI, Platforms. Oct 2022. PhD Program at Università degli Studi di Milan.
7. Marco Anisetti. From Traditional Software and Cloud System to ML-based Services. Oct 2022. PhD Program at Università degli Studi di Milan.
8. Marco Anisetti. Big Data Architecture for Smart City. 24 Jun 2022. Seminar 6 Days Faculty Development Program On Iot And Wearable Devices For Smart City Infrastructure", SRM Institute of Science and Technology, Delhi NCR Campus, Ghaziabad, India.
9. Marco Anisetti. Assurance of Big Data. 25 Feb 2022. Seminar at Shandong University of Technology, China
10. Michelangelo Ceci. Impetus - Intelligent Management of Processes, Ethics and Technology for Urban Secirity. 23 Dec 2022. Seminar at the Big Data course, Masters' programme in Computer Science at Università degli Studi di Bari.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.7 Videos

All videos can be found on the IMPETUS YouTube channel and in Table 4: https://www.youtube.com/channel/UClooUBRDw_kr-W7fy1GDW_g.

Table 4: The videos on the IMPETUS YouTube channel

Name	Description	Published date	Views	Likes	Comments
Introducing IMPETUS	An H2020 project using technology to improve security in public places...	Feb 23, 2023	16	0	0
Discover IMPETUS...	Want to know more about the IMPETUS Project? Here's a sneak peak into what we're about...	Jan 30, 2023	45	0	0
IMPETUS Slideshow Presentation Dec 2022	The IMPETUS project, a Horizon 2020 project funded by the European Commission, is an innovative project with the aim of enhancing the resilience of cities in the face of security threats in public spaces. IMPETUS will provide city authorities with new means to address security issues in public spaces using data gathered from a city-wide lattice of cameras, environmental sensors and multiple interconnected AI systems that control key infrastructures within a Smart City. IMPETUS will help protect	Jun 17, 2022	298	2	0
Field-testing the Firearm Detection tool in Oslo	IMPETUS presents the Weapon Detection tool, one of a set of tools we are developing, together with an integrating platform, dedicated to improving the security of open spaces in smart cities. The tool uses AI (Artificial Intelligence) to analyse images from security cameras in outdoor environments to detect small handguns, assault rifles to alert the security staff. The video shows the information presented to security staff when the tool positively identifies a gun (blue rectangles show people	Jun 24, 2022	154	3	0
IMPETUS Day at TIEMS 2021 Virtual Annual Conference Session 4	Presenters: Joe Levy – IMPETUS EU PROJECT WEAPON DETECTION TOOL (CINEDIT, Switzerland) Keren Saint-Hilaire and Joaquin Garcia-Alfaro – ONTOLOGY-BASED ATTACK GRAPH ENRICHMENT (Telecom SudParis Institut Polytechnique de Paris, France) Paolo Mocellin, Matteo Bottin, Chiara Vianello, Giulio Rosati and Giuseppe Maschio – AN APPROACH TO A SAFE EGRESS FROM PUBLIC SPACES DRIVEN BY RISK PRINCIPLES (Università degli Studi di Padova, Italy) Joe Gorman – SUMMING UP AND CONCLUSIONS (SINTEF, Norway)	Feb 6, 2022	49	1	0
IMPETUS Day at TIEMS 2021 Virtual Annual Conference Session 3	PRESENTERS: Radu Popescu – PLATFORM ARCHITECTURE FOR IMPETUS (SIVECO, Romania) Paolo Mignone, Anisetti Marco, Claudio Ardagna, Costantino Mele, Alessandro Balestrucci, Chiara Braghin, Ernesto Damiani, Antongiacomo Polimeno, Donato Malerba and Michelangelo Ceci – BIG DATA INGESTION AND ANALYTICS FOR PHYSICAL THREAT INTELLIGENCE (Università degli studi di Bari, Università degli studi di Milano, Consorzio Interuniversitario Nazionale per l'Informatica – CINI3, Italy) Joaquín Luzón Tuells and Ber	Feb 6, 2022	25	0	0
IMPETUS Day at TIEMS 2021 Virtual	Presenters: Nesrine Kaaniche and Joaquin Garcia-Alfaro – PRIVACY-PRESERVING CHALLENGES FOR URBAN SAFETY (Telecom SudParis Institut Polytechnique de	Feb 6, 2022	18	0	0

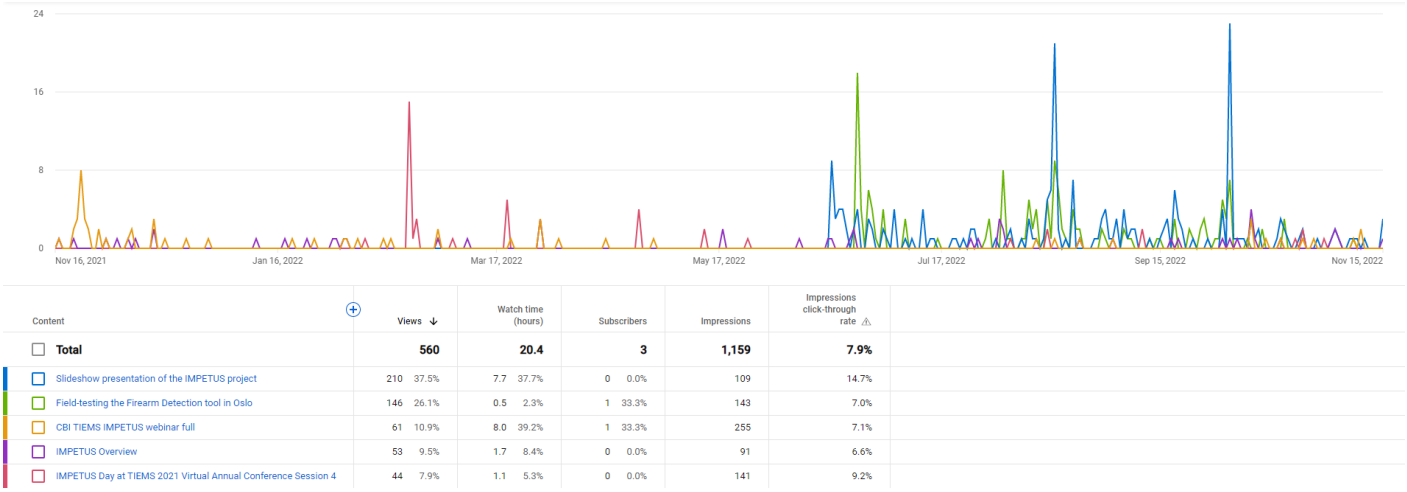
The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Annual Conference Session 2	Paris, France) Martina Ragosta, Matthieu Branlat, Giulia Canilli and Bruno Bonomini – VALIDATE SENSITIVE TECHNOLOGIES IN REALISTIC OPERATIONAL ENVIRONMENT (SINTEF, Norway; Comune di Padova, Italy) Tor Olav Grøtan, Andrea Vik Bjarkø, Osman Mohammad Ibrahim and Ian Simon Gjetrang – PUBLIC SAFETY IN SMART CITIES - A (TRANSITIONAL) RESILIENCE PERSPECT				
IMPETUS Day at TIEMS 2021 Virtual Annual Conference Session 1	Presenters: Joe Gorman – INTRODUCTION ABOUT THE IMPETUS PROJECT INTRODUCING EACH SPEAKER CHAIRING Q&A AFTER EACH PRESENTATION (SINTEF, Norway) Matthieu Branlat – KEY RESULTS FROM H2020 PROJECT IMPETUS (SINTEF, Norway) Jelena Radošević, Krunoslav Katić and Mišo Mudrić – IMPETUS PUBLIC OPINION SURVEY ON ETHICAL ISSUES OF SMART CITY TECHNOLOGIES (Institute for Security Policies, Croatia) Sandro Bologna – IS YOUR SMART CITY A RESILIENT CITY? (TIEMS, Italy)	Feb 6, 2022	14	0	0
IMPETUS Overview	Overview of IMPETUS by Joe Gorman (Project Coordinator)	Nov 11, 2021	66	0	0

2.8 YouTube statistics

There have been 9 videos uploaded to the IMPETUS YouTube channel, with 7 subscribers and 1 like for the channel.

The channel has received 560 views from October 2021 to November 2022 (Figure 10), and the most viewed video is that of the slideshow presentation of the IMPETUS project (210 views), followed by the short video of the field-testing of the Firearm Detection tool (146 views). An increase in viewership has occurred since June 2022 when these two videos went live. Only the five most viewed videos are shown.



Content	Views	Watch time (hours)	Subscribers	Impressions	Impressions click-through rate
Total	560	20.4	3	1,159	7.9%
Slideshow presentation of the IMPETUS project	210 37.5%	7.7 37.7%	0 0.0%	109	14.7%
Field-testing the Firearm Detection tool in Oslo	146 26.1%	0.5 2.3%	1 33.3%	143	7.0%
CBI TIEMS IMPETUS webinar full	61 10.9%	8.0 39.2%	1 33.3%	255	7.1%
IMPETUS Overview	53 9.5%	1.7 8.4%	0 0.0%	91	6.6%
IMPETUS Day at TIEMS 2021 Virtual Annual Conference Session 4	44 7.9%	1.1 5.3%	0 0.0%	141	9.2%

Figure 11: The IMPETUS Project YouTube channel analytics of viewership from October 2021 to November 2022. Only the five most viewed videos are shown.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.9 Events

Brief overviews of the events involving the IMPETUS Project are described below. The level of participation of the IMPETUS Project is also included in italics and parentheses, indicating when IMPETUS arranged the event or when the IMPETUS project participated in an event.

2.9.1 IMPETUS Day at the TIEMS 2021 Virtual Annual Conference – 9 December 2021 [participated]

This was a five- day conference, with Thursday, 9 December 2021 allocated to IMPETUS – and aptly dubbed "IMPETUS Day". This conference gave the IMPETUS partners an opportunity to describe how their technologies and tools can be used in the IMPETUS platform in the context of urban safety in a smart city. The presentations described how emergency managers can build and/or enhance approaches, tools and capabilities to meet emerging and future smart city challenges. Given that the IMPETUS project focuses on process, ethics and technologies for improving security and mitigating emergencies, it was a compelling and welcome addition to the conference program. Overall, the IMPETUS Day talks were very well received at the conference. A list of presentations is in Chapter 3.2 of this report.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/58-impetus-day-at-tiems-2021-virtual-annual-conference

2.9.2 First Acceptance Pilot in the City of Oslo – 3-5 November 2021 [*arranged*]

From 3–5 November 2021, the City of Oslo was host to the first Acceptance Pilot. As the first project-wide face-to-face meeting since the start of the IMPETUS project, this was an auspicious occasion and celebrated by all who attended. This Acceptance Pilot gave partners the time to get to know and understand the tools and what each partner brought to the project. Attendees got the chance to delve into IMPETUS tools and gain a deeper understanding of how the platform capability has developed with a clear vision of what the IMPETUS solution will achieve in the future. This meeting gave partners the opportunity to demonstrate their tools and technologies in practical situations. The first live demo of the Weapons Detection tool took place.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/59-first-acceptance-pilot-in-the-city-of-oslo

2.9.3 Acceptance Pilot in Padova – 1-3 December 2021 [*arranged*]

On 1–3 December 2021, Padova hosted the second Acceptance Pilot of the project. Progress made by the IMPETUS partners made this a pivotal step forward in developing the IMPETUS Solution with respect to the utility of the tools and usability of the IMPETUS platform. The Acceptance Pilot in Padova aimed to improve awareness of the local stakeholders, involve the right end-users, test the tools, and collect feedback, ideas, comments and any other contributions on developments. The Municipality of Padova welcomed the IMPETUS partners and took part in the exercises and test with great enthusiasm. A live demo of the Weapons Detection tool was also shown.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/60-acceptance-pilot-in-padova

2.9.4 IMPETUS at the 2nd ECSCI Workshop – 27 April 2022 [*participated*]

As one of 24 participating projects in the European Cluster for Securing Critical Infrastructures (ECSCI), the IMPETUS project joined the second ECSCI Virtual Workshop on Critical Infrastructure Protection on Wednesday, the 27th of April 2022, in a virtual conference room. The IMPETUS project Coordinator presented key results of the project. The ECSCI workshop covered all areas of both cyber and physical security in a range of industries, including industrial sectors (e.g., energy, transport, health, sanitation, financial and telecommunications). It brought together policy makers, industry and academic members, practitioners, and representatives from the European Commission to present and discuss their novel techniques in security modelling, IoT security, AI, information sharing, security detection and mitigation techniques.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/62-impetus-at-the-2nd-ecsci-workshop-critical-infrastructure-protection

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.9.5 Live Exercise in City of Oslo – 18 August 2022 [*arranged*]

A comprehensive scenario was prepared and implemented at Oslo City Hall on the 18th of August for the first live exercise of the IMPETUS platform and tools. All the IMPETUS tools supporting the processes of the city's Security Operations Centre (SOC) were brought into one place, where about 30 project participants, five COSSEC members and about 60 external guests gathered. The scenario included testing of the individual roles and functions of the IMPETUS platform and integrated tools. There was an informal poster/demo session that provided detailed demonstrations of the tools and Practitioners Guides. Guests could move freely between the "stations" hosted by project members. The event was successful in promoting the IMPETUS Tools and Platform, while also helping the project team identify aspects of the IMPETUS solution and events ahead that could be improved.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/63-live-exercise-in-city-of-oslo

2.9.6 Live Exercise in Padova – 6 October 2022 [*arranged*]

The second and final live exercise in the project took place in Padova on 6th October 2022. Project partners and around 30 external guests gathered in the offices of a local police station and followed the exercise via live video links to the location of the exercise itself (Piazza del Signori in central Padova) and to the SOC (Security Operations Centre) where staff were using IMPETUS tools to monitor and respond to events as they unfolded.

Overall, the Padova IMPETUS Live Exercise was a successful event, and many important lessons were learned which will be of lasting value for project participants and future users of project results.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/64-live-exercise-in-padova

2.9.7 S4AllCities Final Live Exercise and Final Dissemination Event, Bilbao – 20-21 October 2022

The first day (20.10.2022) was the final LiveEx of S4AllCities. It used a format very like our event in Padova, with guests watching a presentation and screenshots at a location outside the city centre while the event itself was taking place in the city. There was also an exhibition showing the different tools (they called it "Carousel stations"). The second day was the project's final dissemination event and included welcomes and project overview, open panel discussion (mostly with guests), presentations from other projects (IMPETUS, STARLIGHT, Secu4All, NIGHGTINGALE, DARLENE), and informal discussions.

This event gave IMPETUS the opportunity to: (1) present IMPETUS to a group with a clear interest in the specific topic; (2) network and grow our co-operation with Efus and establishing personal contacts at this event; and (3) gain technical insight into S4AllCities and how this project could help us to "position" our results in a wider context.

2.9.8 IMPETUS at TIEMS 2022 Hybrid Annual Conference – 17-21 October 2022 [*participated*]

The TIEMS 2022 Hybrid Annual Conference on "Challenges in Emergency Management - Toward 2030 and Beyond" took place from 17-21 October 2022 at Kennesaw State University in the Atlanta, Georgia, USA There were 271 attendees from 38 countries in person and online. The conference was a hybrid one with both physical and virtual participation. Session 5 on Day 2 (chaired by George Markowsky, TIEMS) of the conference played host to the IMPETUS Project. All sessions at the conference were recorded and can be watch on the Capacity Building International Vimeo channel. You can watch the IMPETUS session at https://vimeo.com/773796079.

Full report: https://impetus-project.eu/index.php/news/12-news-and-events/66-impetus-at-tiems-2022-hybrid-annual-conference

2.9.9 Final Dissemination event – 30-31 January 2023

This event was organized by IMPETUS in collaboration with the Secu4All project and held in Rotterdam. There were 67 participants, including 12 COSSEC members and representatives from the EU projects IMPETUS, Secu4All, SURE, Snap4City, PRoTECT, and S4AllCities. Attendees included project participants from IMPETUS, Secu4All, and other related projects, together with stakeholders from municipalities, law enforcement, and policy making.

One of the objectives of the meeting was to share results, experiences, and perspectives around the theme of *improving safety in public spaces in urban environments*. This event was also designed to establish relationships and understandings that will advance the effective use of advanced technologies to improve public safety.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

The meeting was organized to maximize the sharing of perspectives and the potential for future collaboration. Each of three panels had members selected to represent multiple perspectives, and open discussion with the audience was encouraged. In addition, multiple opportunities for informal networking were provided around meals, a reception, and exhibits.

Online report: https://impetus-project.eu/index.php/news/12-news-and-events/67-final-dissemination-event-30-31-january-2023

2.10 Networking and cooperation including COSSEC

2.10.1 COSSEC

The central networking group for IMPETUS is COSSEC (Community of Safe and Secure Cities). The main cooperation outside the project has been done through its activities. IMPETUS member and affiliates continuously seek individuals representing organisations or projects that have an interest in or might be affected by the work involved in creating the IMPETUS Solution. Individuals and organisations are first invited to join COSSEC and, once joined, they are invited participate in events and encouraged to provide feedback. COSSEC members provided advice and feedback relevant to improving the IMPETUS tools, the IMPETUS platform and the Practitioners Guides.

In the second reporting period COSSEC membership increased and they supported IMPETUS through direct involvement in project activities (e.g., plenary meetings, workshops, live exercise events, Final Dissemination Event). COSSEC members provided feedback relevant to IMPETUS validation criteria, and their comments from earlier events helped improve later events. COSSEC enabled collaborations with other projects, resulting in several benefits. One was enriching the flow of ideas and potential solutions as IMPETUS technologies were being developed. A particular example was a software platform presented by the Snap4City project at a COSSEC meeting. This software platform became the basis for the IMPETUS platform, saving the project a considerable amount of development. A second benefit was that COSSEC facilitated greater exposure for the project, expanding the field of potential adopters of IMPETUS results.

As of January 2023, COSSEC has 47 members. A full list of these is in Appendix A of Deliverable 8.5: External Collaboration Report. For a detailed description of COSSEC activities, refer to D8.5.

2.10.2 Other networking and cooperation approaches

IMPETUS is a member of ECSCI cluster https://www.finsec-project.eu/ecsci. DG HOME and CoU/CERIS have selected the ECSCI Cluster as a success story of synergy building. IMPETUS shared its dissemination and communication links with the cluster and has also presented at two of the ECSCI Conferences.

IMPETUS participated in three collaborative workshops with the UrbSecurity initiative, an EU activity involving representatives from nine cities and regions, whose goal is to improve safety and security in urban environments through spatial design and better use of public spaces.

The IMPETUS Final Dissemination Event was a collaboration with the Secu4All project, with 67 attendees representing the IMPETUS, Secu4All, SURE, Snap4City, PRoTECT, and S4AllCities projects.

Details of IMPETUS external collaboration activities can be found in D8.5.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

2.11 Assessment of communication's key performance indicators

The status of key performance indicators defined in D8.1 and updated since D8.2 (correct at the time of writing this Deliverable) are listed in Table 5.

Table 5: Key performance indicators with planned and achieved goals

Channel	What is measured	Indicator(s)	Thresholds	Achieved	
				September 2021	January 2023
Website					
	Interest generated towards the value chain and other stakeholders (including the public at large)	Number of visits	> 10,000 unique visits	>2000	>3100
		Number of hits per page	> 1000 hits	~1297 (12-2033)	~1500 (9-8961)
		Number of references of the website on other sites	> 50 references (other sites)	21	~180
	Website update frequency	Number of days that pass without an update	< 30 days	6-77	5-60
Project brochure					
	Reach of the brochure	Number of brochures created	2,000 copies	First brochure in preparation	3 brochures: 1 e-brochure and 2 printed flyers (200 copies each)
		Request for additional project information generated by the brochure	> 200 requests for additional information	-	Undetermined
Pilot videos					
	Reach of the videos	Traffic generated on YouTube	>10,000 views	2-13	13-223 Views
COSSEC					
	Community constitution and events	Number of members	> 40 members	23	47
		Diversity of members	> 10 cities > 5 citizen groups > 10 EU countries	6 cities 1 citizen group 11 EU countries	17 cities 5 citizen groups 14 EU countries

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Channel	What is measured	Indicator(s)	Thresholds	Achieved	
				September 2021	January 2023
		Number of events	> 2 workshops and 2 webinars	2 webinars	3 Webinars (see D8.5, section 3.3, pg 13) 3 Workshops (see D8.5, section 3.4, pg 17)
Social Media					
	Twitter activity	Number of followers	> 500 followers	17	41
		Number of tweets	> 50 tweets	7	54
		Number of profile visits		699	5240
	LinkedIn activity	Number of followers	> 500 followers	28	132
		Number of posts	> 50 posts	6	47
		Number of unique visitors		12	429
		Views per promoted post	> 1500 views for each promoted post	52	899
Newsletter					
	Reach of the newsletter	Number of newsletters created	4 newsletters	1	3 (No. 4 in process)
		Number of readers who received the newsletter through mail	> 1000 email readers	3 through newsletter subscription service; more than 6000 via link sent by email to TIEMS members and followers	19 through newsletter subscription service; > 6000 via link sent by email to TIEMS members and followers
		Number of downloads of newsletter from website	> 300 downloads	527	2036
Press relations					
	Impact of the press relations and press related activities	Number of press releases issued	> 4 press releases	1	1
		Number of press clippings per press release	> 30 press clippings	0	0

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We achieved several of the thresholds indicated in Table 5 and according to plan, but there were several cases in which we did not met these targets. For example, we did not print 2000 copies of the brochure because, considering the number of attendees at each of the events, this number was unrealistic. We also didn't produce press clippings as most news articles are online. Opportunities in the project only allowed for IMPETUS to release one press release. While we met several of our social media targets, the number of views on YouTube and LinkedIn did not quite meet the expected threshold, and the threshold for YouTube views (10000 views) was also unrealistically high. For LinkedIn, we didn't reach the threshold for the number of views and followers and could have performed better in these areas if we had produced more posts on LinkedIn and had attracted more people to follow us earlier on in the project's lifespan. Requests for additional project information generated by the brochure was not deemed pertinent to the KERs of the project since expressions of interest for additional information were dealt with in-person at the live, face-to-face events during the one-on-one poster and exhibition sessions during the event.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

3 Dissemination report

This chapter updates dissemination achievements to include the project's second reporting period based on the Dissemination plan and strategy (Deliverables 8.1 and 9.2). The last sub-chapter brings partners' short-term plan for dissemination of project results at conferences and submission to journals.

3.1 Scientific and technical journals

There have been three IMPETUS related papers published so far in peer reviewed technical journals:

1. S Masmoudi, N Kaaniche, M Laurent. 2022. SPOT: Secure and Privacy-Preserving PrOximiTy Protocol for e-Healthcare Systems. IEEE Access. 10, 106400-106414.
2. A Pellicani, G Pio, D Redavid, M Ceci. 2023. SAIRUS: Spatially-aware identification of risky users in social networks. Information Fusion. 92, 435-449.
3. EP Barracchia, G Pio, A Bifet, HM Gomes, B Pfahringer, M Ceci. 2022. LP-ROBIN: Link prediction in dynamic networks exploiting incremental node embedding. Information Sciences. 606, 702-721.

There are also five papers in preparation:

1. Marco Anisetti, Claudio A Ardagna, Chiara Braghin, Michelangelo Ceci, Donato Malerba, Paolo Mignone, Antongiacomo Polimeno. Facilitating the Balance between Protection and Quality in Big Data Analytics Pipelines for Anomaly Detection.
2. Andrea Bjarkø, Stine Kilskar, Maria V. Ottermo. Litterature study: The role of technological aids in detection of and response to terrorist attack.
3. Roberto Corizzo, Gianvito Pio, Emanuele Pio Barracchia, Nathalie Japkowicz and Michelangelo Ceci. HURI: Hybrid User Risk Identification in Social Networks.
4. Paolo Mocellin, Matteo Bottin, Chiara Vianello. Application of risk principles to optimise complex evacuations
5. Andrea Bjarkø, Stine Kilskar, Maria V. Ottermo. Litterature study: The role of technological aids in detection of and response to terrorist attack

The dissemination timeline, put in the context of milestones and delivery of results, is presented in the Dissemination strategy (Deliverable 9.2). We expect that dissemination through journals will continue beyond project completion.

3.2 Scientific and technical conferences and events

There have been several conferences organized by IMPETUS members, and members have participated in many others, presenting IMPETUS results.

Conferences organised by IMPETUS Members

1. The 1st Italian Conference on Big Data and Data Science, www.itadata.it
2. Workshop on Big Data and Data Science for Next-Generation Distributed Systems, https://sesar.di.unimi.it/bdds2022/

Participation in conferences resulted in papers published in conference proceedings, which we list below:

1. Paolo Mignone, Donato Malerba, Michelangelo Ceci (UNIBA-CINI). Anomaly Detection for Public Transport and Air Pollution Analysis. IEEE BigData workshop BigEACPS, 17-20 December 2022, Osaka, Japan.
2. Paolo Mignone, Donato Malerba, Michelangelo Ceci (UNIBA-CINI). Anomaly Detection for Physical Threat Intelligence. Workshop on New Frontiers in Mining Complex Patterns of the ECML PKDD conference, 19-23 September 2022, Grenoble, France.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

3. Joaquin Garcia-Alfaro, Nesrine Kaaniche, Aymen Boudguiga, Gustavo Gonzalez Granadillo (MIT). Efficient Hybrid Model for Intrusion Detection Systems. INSTICC Conference, Proceedings of the 19th International Conference on Security and Cryptography – SECRYPT, 11-13 July 2022, Lisbon, Portugal. Pp 694-700. https://doi.org/10.5220/0011328300003283.
4. T de Groot, J de Heer, R Hrynkiewicz, T Oortwijn, M Tolhuisen. 2022. Evaluation of Real-time Assessment of Human Operator Workload during a Simulated Crisis Situation, Using EEG and PPG. In: ICCAS 2022: The International Conference on Cognitive Aircraft Systems, 1-2 June 2022, Toulouse, France.
5. R Corizzo, M Ceci, G Pio, P Mignone, N Japkowicz. 2021. Spatially-Aware Autoencoders for Detecting Contextual Anomalies in Geo-Distributed Data. In: C Soares, L Torgo (eds) Discovery Science. DS 2021. Lecture Notes in Computer Science, vol 12986. Springer, Cham.
6. M Anisetti, CA Ardagna, C Braghin, E Damiani, A Polimeno, A Balestrucci. 2021. Dynamic and Scalable Enforcement of Access Control Policies for Big Data. In: MEDES '21: Proceedings of the 13th International Conference on Management of Digital EcoSystems. Association for Computing Machinery, 1-3 November 2021, New York, United States. pp 71–78.
7. Alexia Comte, Axelle Cadiere, Sebastien Courtin, Mathieu Tur, Benoit Roig, Gilles Dusserre, Sandrine Bayle. Biological Risk Detection. 10 Oct 2022. Lambda Mu, 23th Congress on risk management and operational safety (Congrès de maîtrise des risques et de sûreté de fonctionnement)
8. Paolo Mignone, Donato Malerba, Michelangelo Ceci. Anomaly Detection for Physical Threat Intelligence. 20 Sep 2022. ITADATA 2022 CEUR Workshop Proceedings. Volume 3340, paper38. https://ceur-ws.org/Vol-3340/paper38.pdf

We next list conferences, workshops and webinars in which IMPETUS members have presented and discussed the project.

1. Joe Gorman. IMPETUS. Fire and City Resilience – Counter Terrorism Preparedness Network. 8 March 2023.
2. Harald Drager. TIEMS. Critical gap and policy entry points for strengthening sustainable and resilient communities. Sustainable & Resilient Communities – Climate, Environment & Net Zero Targets. C20 Dialogues Webinar Series. Civil20 India 2023 Working Group. 20 February 2023.
3. Matteo Bottin, Paolo Mocellin*, Chiara Vianello, Giulio Rosati, Giuseppe Maschio. Safe Egress Scenario Detection: from Baseline to Active Events. 07 Feb 2023. Italian Conference on Big Data and Data Science 2022 (ITADATA2022).
4. Joe Levy. Weapon Detection Tool, TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
5. Maria Mirada. Social Media Detection Tool. TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
6. Ron Ofer . Cyber Security Detection Tool. TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
7. Osman Ibrahim. Experiences from the IMPETUS Live Test in the City of Oslo. TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
8. Bruno Bonomini. Experiences from the IMPETUS Live Test in the City of Padova. TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
9. Krunoslav Katic, Jelena Radosevic, Miso Mudric. IMPETUS Web survey on Ethical Issues of Smart City Technologies – a wider perspective. TIEMS 2022 Hybrid Annual Conference, 17-21 October 2022, Atlanta, Georgia, USA.
10. Joe Levy. General information about IMPETUS, Scenario-based discussions in breakout groups. 4 Apr 2021. Cybertech.
11. Joe Levy. IMPETUS Weapon Detection Tool. GISEC, Dubai World Trade Centre, March 2022.
12. Sandrine Bayle, Joaquin Garcia-Alfaro. Platform for securing cities – The European IMPETUS Project. 31 Mar 2022. IMT Conference.
13. Jelena Radosevic. Korištenje pametnih tehnologija u sigurnosti javnih prostora - INSIGPOL IMPETUS istraživanje javnog mijenja. Civil Protection and Crisis Management Conference, 8 April 2022, Dubrovnik, Croatia.
14. Jaoquin Garcia-Alfaro. CERIS-FCT Workshop on Protection of Public Spaces. CERIS-FCT, 7 April 2022.
15. Joe Gorman. Intelligent Management of Processes, Ethics and Technology for Urban Safety. 27 APr 2022. Consolidated Proceedings of the Second ECSCI Workshop on Critical Infrastructure Protection and Resilience Virtual Workshop, April 27–29, 2022

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

16. Thomas de Groot, Manon L. Tolhuisen, Rafal Hrynkiewicz, Tije Oortwijn and Johan de Heer. Update on our ongoing evaluation of our workload monitoring system during a simulated event. 02 Jun 2022. International Conference on Cognitive Aircraft Systems (ICCAS 2022).
17. Joe Gorman. IMPETUS: A research and innovation project addressing urban safety. S4AllCities Final LiveEx and Workshop, 20–21 October 2022, Bilbao, Spain.
18. Marco Anisetti, Claudio A. Ardagna, Chiara Braghin, Ernesto Damiani, Antongiacomo Polimeno, Alessandro Balestrucci. Dynamic and Scalable Enforcement of Access Control Policies for Big Data. ACM MEDES 2021, 2 November 2021, Hammamet, Tunisia.
19. Matthieu Branlat. Key Results from H2020 Project IMPETUS. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
20. Jelena Radošević, Krunoslav Katićand Mišo Mudrić. IMPETUS Public Opinion Survey On Ethical Issues of Smart City Technologies. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
21. Sandro Bologna. Is your smart city a resilient city? TIEMS 2021 Virtual Annual Conference, 9 December 2021.
22. Nesrine Kaaniche, Joaquin Garcia-Alfaro. Privacy-preserving challenges for urban safety. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
23. Martina Ragosta, Matthieu Branlat, Giulia Canilli, Bruno Bonomini. Validate sensitive technologies in realistic operational environment. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
24. Tor Olav Grøtan, Andrea Vik Bjarkø, Osman Mohammad Ibrahim, Ian Simon Gjetrang . Public safety in smart cities - a (transitional) resilience perspective. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
25. Radu Popescu. Platform Architecture for IMPETUS. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
26. Paolo Mignone, Anisetti Marco, Claudio Ardagna, Costantino Mele, Alessandro Balestrucci,Chiara Braghin, Ernesto Damiani, Antongiacomo Polimeno, Donato Malerba, Michelangelo Ceci. Big data ingestion and analytics for physical threat intelligence. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
27. Joaquín Luzón Tuells, Berta Biescas. Ethical Challenges in the social media Ai-Driven Threat Detection For Cities And Citizens. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
28. Joe Levy. IMPETUS EU project weapon detection tool. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
29. Keren Saint-Hilaire, Joaquin Garcia-Alfaro, ontology-based attack graph enrichment. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
30. Paolo Mocellin, Matteo Bottin, Chiara Vianello, Giulio Rosatiand, Giuseppe Maschio . An approach to a safe egress from public spaces driven by risk principles. TIEMS 2021 Virtual Annual Conference, 9 December 2021.
31. Joe Levy. Weapon Detection Tool. TIEMS 2022 Annual Conference (hybrid), 17–21 October 2022, Kennesaw State University, Atlanta, Georgia, USA.
32. Maria Mirada. Social Media Detection Tool. TIEMS 2022 Annual Conference (hybrid), 17–21 October 2022, Kennesaw State University, Atlanta, Georgia, USA.
33. Ron Ofer. Cyber Threat Intelligence Tool. TIEMS 2022 Annual Conference (hybrid), 17–21 October 2022, Kennesaw State University, Atlanta, Georgia, USA.
34. Bruno Bonomini. IMPETUS Padova Live Exercise VALIDATION. TIEMS 2022 Annual Conference (hybrid), 17–21 October 2022, Kennesaw State University, Atlanta, Georgia, USA.
35. Osman Ibrahim. IMPETUS Padova Live Exercise VALIDATION. TIEMS 2022 Annual Conference (hybrid), 17–21 October 2022, Kennesaw State University, Atlanta, Georgia, USA.
36. Joe Levy, Panel on Creating a comprehensive ecosystem for computer vision applications - Volkswagen Vision Workbench. 12 Oct 2022. https://www.izb-online.com/die-izb/rueckblick-2022/izb-livestage/izb-livestage.html.
37. Claudio Ardagna, Chiara Braghin, Michelangelo Ceci. EU H2020 Project Intelligent Management of Processes, Ethics and Technology for Urban Safety (IMPETUS). 20 Sep 2022. The 1st Italian Conference on Big Data and Data Science. https://www.itadata.it/2022/.
38. Matthieu Branlat. Workshop - For a fair and transparent use of AI technologies in urban security. 21 Oct 2021. Security, Democracy and Cities 2021 conference organised by Efus (European Forum for Urban Security).
39. Joe Gorman. General project presentation and interactive discussions. 03 Dec 2020. 27th TIEMS Annual Conference, "Citizens and cities facing new hazards and threats".
40. Joe Gorman. General project presentation and interactive discussions. 25 Feb 2021. CERIS Innovation Workshop.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

41. Joaquin Garcia-Alfaro. General presentation of IMPETUS + round table, addressing questions about IMPETUS from the audience. 07 Apr 2022. CERIS FCT workshop on protection of public spaces
42. Krunoslav Katić, Jelena Radošević, Mišo Mudrić. WEBINAR - Intelligent Management of Processes, Ethics and Technology for Urban Safety - an international EU Horizon 2020 project IMPETUS' perspective. (Croatian)10 Jun 2022.
43. Claudio Ardagna, Ernesto Damiani. Panel On Data Sovereignty and Data Governance: The Role of Open Science and Open Data. 21 Sep 2022. The 1st Italian Conference on Big Data and Data Science.
44. Chiara Braghin. An access control model for big data industrial scenarios. 18 Jul 2022. Workshop on Big Data and Data Science for Next-Generation Distributed Systems.
45. Matthieu Branlat. H2020 Project IMPETUS: Overview and Key Results. 09 Dec 2021. TIEMS 2021 Virtual Conference.
46. Paolo Mignone, Donato Malerba, Michelangelo Ceci. Anomaly Detection for Physical Threat Intelligence. 20 Sep 2022. ITADATA 2022 CEUR Workshop Proceedings
47. Jelena Radosevic, Krunoslav Katic, Miso Mudric. Survey on Use of Smart Technologies in Detecting Security Threats in Public Places. 16 Jun 2021. TIEMS webinar.

3.3 Summaries of Key Exploitable Results

We refer to the complete set of KERs (Key Exploitable Results) IMPETUS as the "The IMPETUS Solution". It consists of a set of individual tools, the IMPETUS platform that provides a unified access to the tools, and the Practitioners Guides. The Practitioners Guides provide advice about ethical, cybersecurity and operational matters surrounding adoption of the type of technology developed in IMPETUS (including, but not limited to, specific IMPETUS tools).

To help spread information about the potential of the KERs we have produced one-page summaries of each, highlighting what problem they address, what benefits they bring, and who would be potential users.

The KERs are summarised in Figure 12.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

Figure 12: The IMPETUS Solution (screenshot from website)

The one-page descriptions of the items listed above are currently available in English and Italian, in pdf and html. These have also been compiled into a booklet "IMPETUS Results", which also includes a table summarising the available and contact details of suppliers, and is available in English (https://impetus-project.eu/images/TOOLS_PDFS/IMPETUS_Result_Description_All.pdf) and Italian (https://impetus-project.eu/images/TOOLS_PDFS/IMPETUS_Result_Description_ITA_All.pdf).

For more detailed technical information about the tools, refer to D3.4 Tool Development Final Report.

3.4 Open repositories

Our three published journal articles are all Green Open Access. Many of our other publications are publicly available.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

3.5 University master and doctoral programmes

CINI-UNIMI included IMPETUS project research goals and expected results in two courses:

- PhD course on Governance, Risk, Compliance in Distributed Systems, Università degli Studi di Milano
- Advanced course on Big Data, AI, Platforms, Università degli Studi di Milano

IMT included IMPETUS project research goals and expected results in a course:

- Securite des Systemes et des Reseaux, Master Year 2 in Cybersecurity, Institut Polytechnique de Paris

More details about the lectures are listed under Chapter 2.5: Academic lectures and seminars.

3.6 Communication channels used for dissemination

The project's website is the main communication channel for disseminating publicly available information on IMPETUS activities: https://impetus-project.eu/index.php/impetus-outputs/publications.

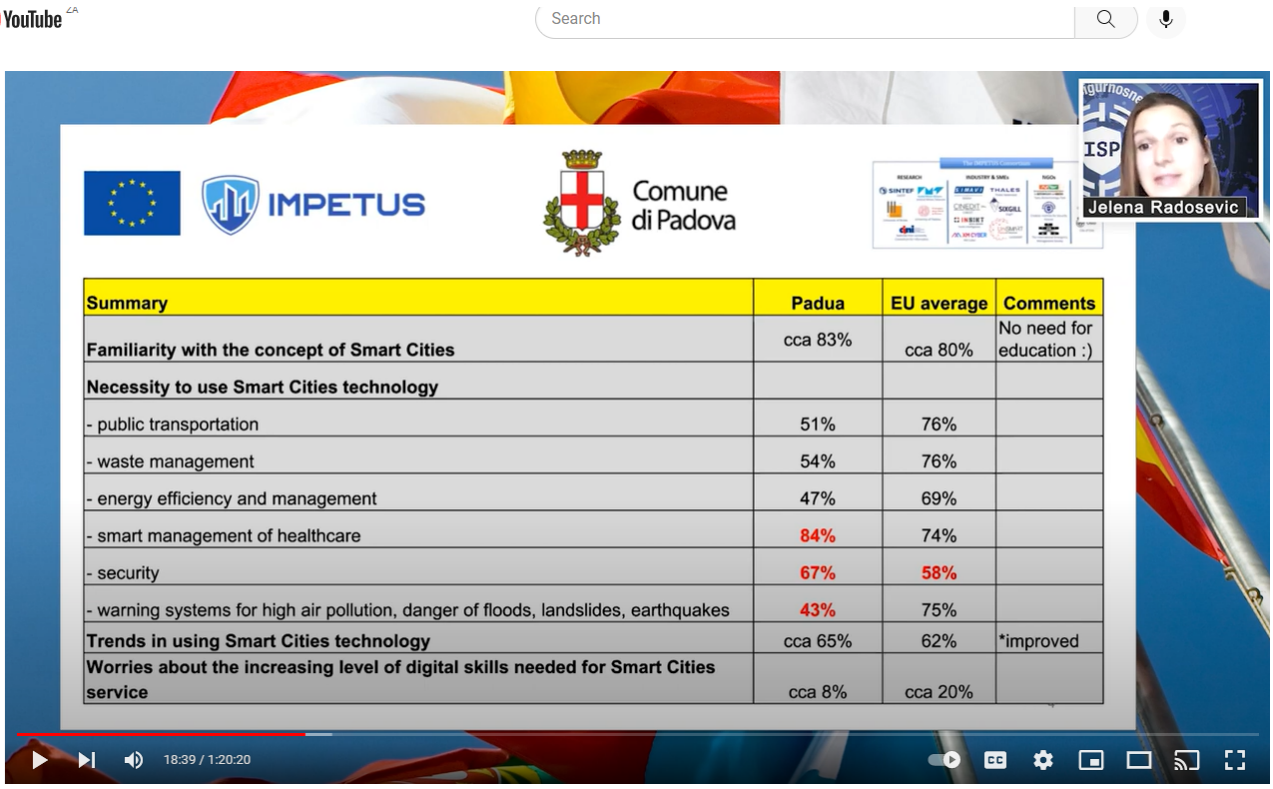
The IMPETUS website was used as the platform from which participants could participate in a "Smart City Survey" (https://impetus-project.eu/index.php/survey/smart-city-survey), which contributed to the "Ethics" aspect of the IMPETUS project. The aim of the web survey was to determine participants' views and concerns on the use of technology to gather data to provide protection services for their smart city.

The survey remains active and consists of 15 questions and should take approximately 5-10 minutes to complete.

The website also hosts a short Consent Form that explains the voluntary nature of participation, and conditions associated with it.

Preliminary results were made available during a presentation at the CBI TIEMS Conference (11 November 2021), and is available on the IMPETUS project's YouTube channel: https://www.youtube.com/watch?v=Ca-5lFgtXr8&t=1123s. A screen shot taken from the video showing preliminary survey results is shown in Figure 13.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.



Summary	Padua	EU average	Comments
Familiarity with the concept of Smart Cities	cca 83%	cca 80%	No need for education :)
Necessity to use Smart Cities technology			
- public transportation	51%	76%	
- waste management	54%	76%	
- energy efficiency and management	47%	69%	
- smart management of healthcare	**84%**	74%	
- security	**67%**	**58%**	
- warning systems for high air pollution, danger of floods, landslides, earthquakes	**43%**	75%	
Trends in using Smart Cities technology	cca 65%	62%	*improved
Worries about the increasing level of digital skills needed for Smart Cities service	cca 8%	cca 20%	

Figure 13: A screen shot of the preliminary results from the Smart City Survey hosted on the IMPETUS website

3.7 Assessment of dissemination's key performance indicators

The main goal of dissemination established in the IMPETUS DoA is 12 published papers in scientific journals. So far, there have been three published original research articles in scientific journals, with three in preparation (journal has not been identified as at Feb 2023). There are also eight published conference proceedings articles, which are research outputs that can be considered published articles; however, these are not in recognised scientific journals, but are in a collection of articles presented at a conference.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

4 Update on communication and dissemination since Deliverable 8.2

The First Project Review identified opportunities to improve IMPETUS communication and dissemination. This resulted in a plan to amend our communication and dissemination strategy in the second half of the project (see Section 4.2 in Deliverable 8.2).

This section highlights progress made in implementing this plan, aspects of the plan which have not yet been addressed, and how we plan to address them.

The changes described in D8.2 were driven by the following objectives:

- Overall, make dissemination more energetic
- Do more to communicate and disseminate IMPETUS results to end users, service beneficiaries, citizens, and target groups
- Increase participation of COSSEC members.

To meet these objectives, we planned the following activities:

1. Enhance contact and direct involvement of external collaborators
2. Arrange events aimed at wide audiences
3. Include small-scale but highly targeted events
4. Establish a core group of active members within COSSEC

Our work on these activities is described below.

4.1 Enhanced contact and direct involvement of external collaborators

4.1.1 Practical approach

We emphasised communication and direct involvement with end users, service beneficiaries, citizens, target groups and COSSEC members by encouraging them and other guests to attend online and face-to-face workshops and events, these were the acceptance pilots and live exercises that took place in Oslo and Padova and hosted by IMPETUS. We were, however, unable to actively engage with members of the public.

4.1.2 Outcome

Overall, 60 people from COSSEC participated in these events. While some participants only observed the events, other provided valuable feedback used for subsequent events. This feedback included comments about clarifying terminology, suggestions on more practical aspects of running the events, e.g., scenario planning, sequencing of agenda items, as well as their views on the success of the event.

We've received valuable input related to KERs. This has helped us improve the IMPETUS Solution as well as other project outputs.

4.1.3 Further activities to maintain enhanced contact and involvement

To ensure and maintain active participation in IMPETUS, through the remaining months of the project we tried to encourage participation continuously and regularly in our events through regular communication with end users, service beneficiaries, citizens, target groups and COSSEC members through email communication, social media, newsletters, news media, popular media (e.g., magazine articles), scholarly articles, workshops, conferences and live in-person events.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

4.2 Arrange events aimed at wide audiences

4.2.1 Practical approach

IMPETUS-hosted events aimed at a wider audience included two acceptance pilots and the live exercises in Oslo and Padova. IMPETUS also had a survey questionnaire on the website intended to gather people's opinions and thoughts about secure and smart cities (see https://impetus-project.eu/index.php/survey/smart-city-survey). We also arranged webinars in which two of the partners presented the Cyber Threat Intelligence Tool and Fire Arm Detection Tool to audiences outside of the project and COSSEC. We also attended Final Live Exercise in Bilbao on 20-21 October 2022 hosted by our "sister" project, S4AllCities. We participated in collaborative workshops and meetings with UrbSecurity (see Section 4.2 in D8.5). The Final Dissemination Event in Rotterdam was designed to appeal to a wide audience, with a profile that went far beyond simply promoting IMPETUS results.

4.2.2 Outcome

The practical demonstrations of the tools allowed audiences to view the IMPETUS tools in action. These events also gave audiences and participants the opportunity to engage and interact with the developers of the tools through an exhibition-style walk-around activities or interactive panel debates as part of the event program. We increased networking by arranging co-operation with other projects (e.g. collaborative workshops with UrbSecurity and participating with our "sister" project, S4AllCities, in a Final Live Exercise in Bilbao on 20-21 October 2022).

The two acceptance pilots and the live exercises in Oslo and Padova were successes, with several COSSEC and local responders attending. The slideshow presentation information video is also the most watched video on our YouTube channel with 210 views.

In addition to 30 attendees from IMPETUS, the Final Dissemination Event was attended by 23 people from Secu4All, 12 members of COSSEC and representatives from municipalities in Portugal and the Czech Republic. Projects represented besides IMPETUS and Secu4All included SURE, Snap4City, PRoTECT, and S4AllCities.

4.3 Small-scale but highly targeted events

4.3.1 Practical approach

This part of our strategy was to arrange small-scale but highly targeted events, such as:

- Arranging visits to cities who might be potential adopters
- Meeting with specialist interest groups, etc.
- Open days to reaching citizens, i.e., the wider public.

4.3.2 Outcome

One targeted visit was arranged to a city outside the consortium: Barcelona. See Appendix A.

The acceptance pilots and live exercises in Oslo and Padova offered good opportunities for targeted dissemination. At these events, we were able to interact with professionals outside of the project, adding to IMPETUS dissemination. We had the opportunity to meet and discuss strategies and use/adoption of the tools with smart city representatives and managers, critical infrastructure operators and first responders. We were, however, unable to actively engage with members of the public.

Other targeted events included well-attended panel debates at the acceptance pilots and live exercises on effectiveness of the IMPETUS Solution in general and its compliance with relevant city policies on safety and security, as well as ethical compliance. Attendees provided valuable feedback on security, ethical and practical issues related to the IMPETUS Solution.

Additionally, webinars and workshops arranged for COSSEC constituted targeted dissemination events.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

4.3.3 Strategy that could have been used to improve communication and dissemination

For citizens witnessing the live demos when going about their daily business, and trying to understand what was going on at the time, posters and videos from the acceptance pilots could have been used to inform them about project aims and benefits for society. The live exercises did not, however, include information days before the actual event. The event could have been better marketed with the citizens, with information about IMPETUS provided. These information days could also have been used to recruit volunteers for exercises.

4.4 External Cooperation Working Group

4.4.1 Practical approach

Our plan was to boost the role of COSSEC by forming a core group consisting of 12 or fewer motivated members. We were not able to do this due to the limited availability of COSSEC members. However, to support increased COSSEC engagement, we formed an External Cooperation Working group within the Consortium, to help recruit COSSEC members, as well as to establish connections with external projects and initiatives.

4.4.2 Outcome

This group was tasked with improving communication through regular online meetings, workshops and webinars, as well as face-to-face discussions organised at the acceptance pilots and live exercises in Oslo and Padova, and project plenary meeting in Trondheim. The working group was instrumental in arranging COSSEC webinars, meetings with police and other stakeholders, collaborative sessions during the acceptance pilots and exercises, and joint meetings with other projects (see Section 4 in D8.5).

4.4.3 Future external communication and dissemination

The connections made through the efforts of the External Cooperation Working Group have fostered awareness of IMPETUS results across a wide range of stakeholders. We expect our results to continue to inform smart city initiatives and projects after IMPETUS has ended.

The research leading to these results has received funding from Horizon 2020, the European Union's Framework Programme for Research and Innovation (H2020) under grant agreement n° 883286.

5 Future prospects

Journal article/s that are currently in preparation will be submitted in the next few months.

A report of the final project meeting ("IMPETUS Final Dissemination Event") will be available in the fourth, and final, Newsletter and on the website. The Practitioners Guides will also be made available to European bodies and organizations following this event as a starting point for recommendations, handbooks, and similar. The future of COSSEC and partner cities using the IMPETUS solution is still under discussion at the time of writing; some details can be found in D8.5.

Arrangements are being made to ensure that the project website and social media channels remain active after the end of the project.

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6 Appendix A: Report on targeted visit to Barcelona, 24th February 2023

Goals of the meeting

Part of the project's dissemination and communication strategy was to arrange visits to cities outside the consortium to present the IMPETUS concept and results and establish a close dialogue with relevant actors in the city. The goals of doing so were to:

- Increase awareness of IMPETUS and, more widely, the concept of using technology to improve safety in public spaces.
- Obtain feedback and initial reactions about the IMPETUS solution (functionality etc.), from actors who are seeing it for the first time.
- Obtain feedback about potential for uptake (to be taken into account in future planning).

Participants (IMPETUS)

- Joe Gorman, SINTEF, Project Coordinator
- Osman Ibrahim, City of Oslo, City representative
- Jennifer Woodward, Insikt, tool provider (Social Media Detection tool)

Participants (Barcelona)

Eight representatives of city police, fire department and city departments responsible for security operations:

- CTPN (Counter Terrorism Preparedness Network) coordinator
- Director of prevention services
- Special unit in the police
- Intelligence and projects unit
- Director of investigations
- Planning and risk planning unit in fire brigade
- Joint command central -> SOC
- Operator command central

Agenda

- Presentation of IMPETUS
- Presentation of practical experiences using IMPETUS in Oslo
- Presentation of Social Media Detection tool
- Open discussion and exchange of views

Observations from open discussion

1. Barcelona is a member of Efus and was familiar with the Secu4All project (and understood its focus was not technological). They had not heard of our twin project, S4AllCities.
2. The audience were clearly very interested in what was presented, especially practical experiences from trials, and enthusiastically took part in discussions. They could clearly see the potential – but at the same time explained that political and financial constraints, as well as concerns about privacy, would mean that uptake of technology of this kind would take a long time and face many challenges.
3. The concept of our Practitioners Guides was much appreciated; the people from Barcelona could see that help and guidance on the issues covered in the Practitioners Guides could help address some barriers to adoption. They wanted to look at the contents.

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4. The importance of being able to integrate with existing technology in place (such as TRIO in Oslo) was clearly recognised.
5. The example of the biological attack in the Oslo Live Exercise, with the need for dynamic co-operation between police and the fire department, triggered detailed discussion about the importance of co-ordination.
6. The open-ended nature of the Urban Anomaly Detector (in terms of being able to use different types of "sensor" data) was considered to offer great potential.
7. The SMD tool also generated a lot of interest and discussion, but limitations on the ability to search some types of sources is something that would need further attention.
8. Limitations on use of CCTV are very strict in Barcelona, so it would likely be a long time (and need lots of political interventions) before something like the Firearm Detector could be used.
9. The audience were also interested to know more about S4AllCities, particularly the functionality offered by S4AllCities that is not offered by IMPETUS.
10. The participants strongly agreed that, for future adoption of technology of this type, interoperability of solutions from multiple vendors would be a key factor.

Conclusions from an IMPETUS perspective

The meeting gave us a strong confirmation that the type of approach followed by IMPETUS (with multiple tools and a unifying interface to provide a common picture) makes a lot of sense to potential adopters, and there is enthusiasm for its adoption by actors in the field.

It was also encouraging that the concept of the Practitioners Guides was much appreciated.

On the less positive side (though not unexpected): it was very clear that the road from an initial presentation to city authorities changing the way they do things is a very long one, with many obstacles on the way.

In looking to the future, measures to support interoperability will be important if widespread adoption of technological solutions is to be achieved.

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