



SEMANTIC

end-to-end Slicing and data-drivEn autoMAtion of Next generation cellular neTworks with mobille edge Clouds

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WP7 – Dissemination, communication and standardization

D7.1: Dissemination, standardization, communication and public engagement plan

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1 Executive Summary

The SEMANTIC project has strong commitment to ensure that all activities and research findings are disseminated, communicated, transferred into other research settings and to the society at large, in order to promote understanding of science by non-specialists. This mission will be accomplished through three main activities: dissemination of research results, their exploitation and public engagement.

This deliverable provides an early overview of the dissemination, communication, and standardisation plan. The first objective is to disseminate research achievements in order to foster adequate visibility in standardisation bodies, to promote results visibility in specialised and non-specialised communities. The dissemination of research results comprises the set-up of a public web site, conference and journal publications, open access engagement, 5GPPP initiative, standardisation, workshops and conference organisation, industrial dissemination days and participation in technical committees and special interest groups.

The second objective is to exploit the results and IPR created in SEMANTIC. SEMANTIC has the potential for introducing radical scientific and industrial innovations. All partners have well-defined exploitation plans which are described in this deliverable: Academics in terms of journal publications, conference attendance, international visibility and the provision for adding new modules in their postgraduate programs, industrials in terms of products development and submission of patents to secure new technological know-how.

This deliverable is the first of a series of reports on dissemination, communication and standardisation of SEMANTIC, i.e. it is a living document which will evolve over time. Starting from a first draft version it will emerge to a comprehensive document summing up all dissemination activities undertaken by the partners during the project's lifetime.



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1. Introduction

The dissemination, communication and standardisation plan to be followed within SEMANTIC will be developed along a line of well-defined actions and activities. They will cover all relevant aspects for all partners regardless of their type. A first structure to support and monitor all relevant activities is given below.

SEMANTIC has a strong commitment to ensure that all activities and research findings are disseminated, communicated, transferred into other research settings and to the society at large, in order to promote understanding of science by non-specialists. This mission will be accomplished through three main activities:

- 1.) Dissemination of research results,
- 2.) Their exploitation,
- 3.) Public engagement.

2. General structure

SEMANTIC is introducing a general structure to manage and monitor all related dissemination and exploitation activities. In the course of the project, the topics will be “translated” into real actions. The following draft provides the overall structure with first tangible adaptations. Further details will be provided later on.

A. Dissemination of research results

- A.1 Conference/journal publications

Scientific publications journals and conferences will be one of the main dissemination mechanisms. It is expected that, on average, each ESR will publish two conference papers and one journal paper a year.

- A.2 Open access engagement

Open access will be provided for all scholarly results, by traditional (e.g., IEEE) or open access publishers, who publish only open access journals (gold open access). The practice of depositing articles in institutional repositories or a subject repository (e.g. arXiv) will be also adopted (green open access). All publications will be available in www.openaire.eu, the Open Access Infrastructure for Research in EU. To follow the H2020 open data strategy, a local open data repository will be available, conforming to potential ethical issues.

- A.3 5GPPP Initiative



The most innovative and industrial-oriented results will be presented at the 5GPPP (<http://5g-ppp.eu/>). SEMANTIC will exploit the presence of almost all the beneficiaries in 5GPPP projects. The results of recruited ESRs in the project will be presented through multiple channels (e.g. white papers or presentations), consolidating the SEMANTIC viewpoint in different Work Groups (WG): Spectrum WG, 5G Architecture, Software Networks and Network Management and QoS.

- A.4 Standardization

The industrial partners will contribute to ongoing standardisation activities by presenting achieved results to the relevant bodies. Since standardisation is a long lasting process such activities may continue even after the end of the project.

- A.5 Industrial Dissemination Days

Two IDD events will be organized one on M13 and one on M32, enabling ESRs to present results to industrial experts, potentially exploiting co-location of flagship events organized by the partners (e.g. NI Week conference, NOKIA Hackathon) to provide valuable networking and feedback to the ESRs, while maximizing the project visibility.

- A.6 Workshop/Conference Organization

In close collaboration with the consortium, two workshops and one conference will be organized on M20, M34 and M42, respectively, which will be open to academic and industrial communities, in order to disseminate a unified view of all project achievements. Specific details on the organisation will be determined later on.

- A.7 Participation in IEEE Technical Committees (TC)

SEMANTIC will be present at IEEE TCs, e.g. by creating special interest groups, exploiting the active participation of the consortium in IEEE TCs. ESRs will become members of relevant TCs and attend meetings co-located with IEEE flagship conferences (e.g., ICC, GLOBECOM). The TCs organize different forms (e.g. standardization activities, workshops) of information exchange in the multi-disciplinary fields.

B. Exploitation of results and intellectual property

- B.1 Mainly for academic partners

Academic partners will publish results in journals, they will make presentations in conferences, increasing their international visibility, and they will add new modules in their postgraduate programs.

- B.1 Mainly for industrial partners



Improve their products and solutions, enhance their services, train current and future teams to use the newest research knowledge into industrial efforts, and expand business opportunities.

SEMANTIC is expected to generate a significant amount of intellectual assets, which will include specific methods (protocols, algorithms, policies, etc.), network data statistics and analytics, and network architectural models. Whenever possible, an open access strategy will be adopted (see the policies for disseminating results above), so as to motivate further innovation by academia and industry.

C. Communication and public engagement

- C.1 Communication strategy

SEMANTIC will use different communication channels to promote the project widely to different target groups and to contribute to an EU “Innovation Union”, such as:

- i) Brochures and leaflets describing the potential applications & services of the Project
- ii) Social network accounts (Twitter, LinkedIn, etc.)
- iii) Multimedia content to target public. SEMANTIC will use a YouTube channel for the project showing trailers on the plans, activities and achievements of the project.
- iv) e-newsletters with the project achievements and distributed to different mailing lists
- v) Online/printed press releases and attempt to reach a general audience by approaching TV and radio networks to provide interviews
- vi) Present results and deploy stands and demos showing the project results in Industrial Exhibitions
- vii) White papers to identify project contributions and open issues, targeting to influence policy-makers, regulators and experts.

- C.2 Public engagement strategy

The aim is to interact with the general public and a wide range of public engagement activities will be organized:



- i) Doors Open Days events will be organized in collaboration with existing events.
- ii) Social media, use of several online social media sites
- iii) SEMANTIC Hackathon's
- iv) Café science. Four cafe science events will be scheduled along with some training activities (e.g. workshops, plenary meetings) in informal setting at public areas (e.g., cafe, pubs, etc.) where the ESRs will make a short presentation about their work
- v) Each ESR will give 3 public talks at different local associations, universities, science festivals, high-schools, etc. ESR will explain open issues in a didactic manner to promote the research carried out in the EU and generate interest for science and technology.

3. Supporting Activities

3.1 Website

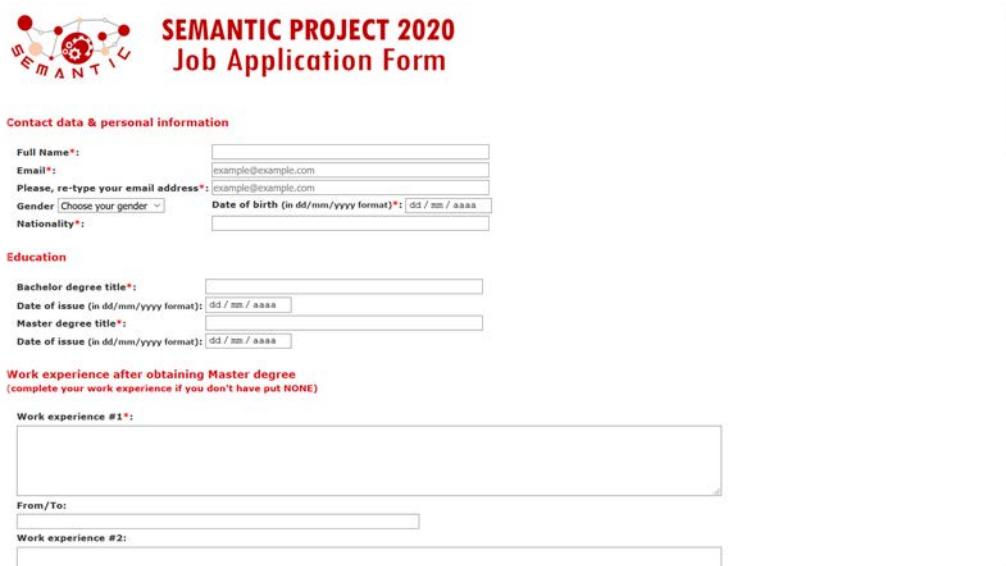
A project website will be established and linked with the OLP training platform. General information with respect to the project (e.g. objectives, consortium composition), key events and milestones, public documents (e.g., deliverables) and communication material (e.g. newsletters) will be publicly available at the website/OLP, including links to communication media (e.g., Twitter). The website's long-term objective is to create a community of interested parties around the project, to accelerate their involvement and to create awareness of the research results.

An initial version of the website is now available in <https://semantic2020.eu/>, the responsible of the initial setup is CTTC and we are currently working on improving the design of the website.

3.2 Online application system

An online application system has been setup to receive all applications centralized, all candidates are submitting their applications through the online system and this way it is easier to control all the applications received and to preserve the security and privacy of applicants. CTTC has setup this online system and controls and distributes all the applications received to the rest of the partners.

The link to the online system is <https://jobapp.semantic2020.eu/>. A snapshot of the website is shown below:



The screenshot shows the 'SEMANTIC PROJECT 2020 Job Application Form'. It is divided into several sections: 'Contact data & personal information' with fields for Full Name, Email (with a re-type field), Gender, Date of birth, and Nationality; 'Education' with fields for Bachelor and Master degree titles and their issue dates; and 'Work experience after obtaining Master degree' with a large text area for 'Work experience #1' and a 'From/To' date range field, followed by a field for 'Work experience #2'.

Figure 1 Online application system

3.3 Twitter

A Twitter account has been setup for the Project: [@semantic_itn](https://twitter.com/semantic_itn). The idea is to have a two-way access between the project partners and the public audience, the content will be updated in a systematic regular basis and the activity will be coordinated by CTTC.

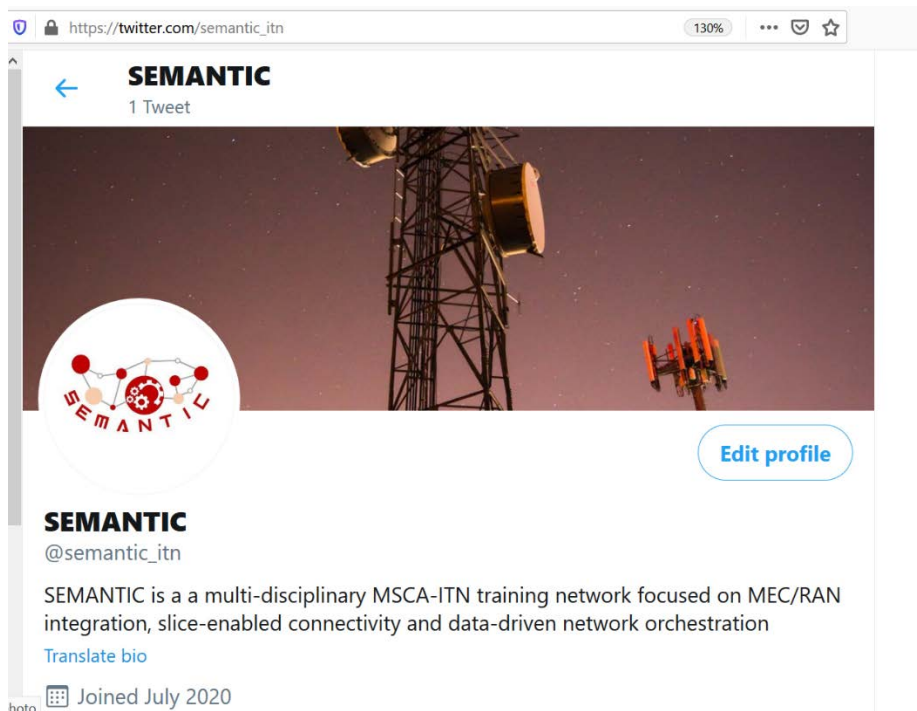


Figure 2 Twitter account (snapshot)

3.3 LinkedIn

A LinkedIn account has been setup for the Project. The idea is to have a two-way access between the project partners and the public audience, the content will be updated in a systematic regular basis and the activity will be coordinated by CTTC.

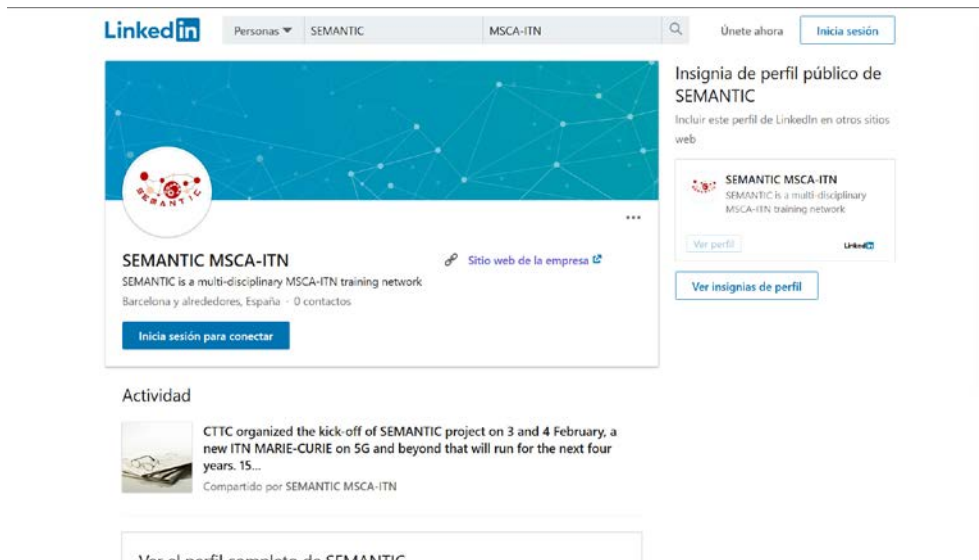


Figure 3 LinkedIn account (snapshot)

3.4 YouTube

A YouTube channel will be setup to host videos related to the SEMANTIC project. The plan is to create four trailers showing the activities and the achievements of the project (M12, M24, M36, M42) and at least one interview per ESR communicating his/her experience.

The clips will be created by using existing infrastructure of the participants – keeping production at a reasonable cost – and will primarily include non-technical information about the project. They will be available through the website and the social media.

3.5 Logo

In order to increase visibility and to create a recognition feature the SEMANTIC logo was designed. It will be largely used in every possible context related to the project.



Figure 4 Project logo

4. Dissemination of research results

4.1 Conference/journal publications

The ESRs from academic and industrial partners are expected to participate to one international conference (e.g. IEEE ICC, IEEE Globecom, EUCAP, IEEE VTC, IEEE PIMRC) per year of their recruitments, they will be encouraged to contribute to EU conferences (e.g. EUCNC) and to publish their work to 2–3 high impact journals. These include:

- IEEE Transactions on Mobile Computing (www.computer.org/portal/web/tmc/home)
- Computer Networks Journal, Elsevier (www.journals.elsevier.com/computernetworks)
- The Journal of Mobile Communication, Computation and Information (Wireless Networks), Springer (<http://www.springer.com/engineering/signals/journal/11276>)
- ACM Springer Mobile Networks and Applications (MONET) Journal (<http://link.springer.com/journal/11036>)
- EURASIP Journal on Wireless Communications and Networking (www.jwcn.eurasipjournals.com)
- IEEE Transactions on Vehicular Technology (www.vtsociety.org)
- IEEE Network (www.comsoc.org/netmag)
- IEEE Transactions on Communications (www.comsoc.org/tc)
- IEEE Transactions on Wireless Communications (www.comsoc.org/twc)
- IEEE Communications Magazine (www.comsoc.org/commag)
- IEEE Vehicular Communications Magazine (<http://ieeexplore.ieee.org>)

4.2 Open access engagement

Open access will be provided for all scholarly results, by traditional (e.g., IEEE) or open access publishers, who publish only open access journals (gold open access). The

practice of depositing articles in institutional repositories or a subject repository (e.g. arXiv) will be also adopted (green open access). All publications will be available in www.openaire.eu, the Open Access Infrastructure for Research in EU. To follow the H2020 open data strategy, a local open data repository will be available, conforming to potential ethical issues.

4.3 5GPPP initiative

The most innovative and industrial-oriented results will be presented at the 5GPPP initiative ([http://5g-ppp.eu/](http://5g-ppp.eu)). SEMANTIC will exploit the presence of almost all beneficiaries in 5GPPP projects (e.g. FOG, EUR, NOKIA and TLN participate in three out of three 5GPPP- Phase 3 infrastructure projects, to articulate the results of recruited ESRs through multiple channels (white papers, presentations, etc.), consolidating the SEMANTIC viewpoint in WGs: i) the spectrum WG (NI is member), ii) 5G Architecture (IQU is member), Software Networks (Nokia is leader) and Network Management & QoS (FOG is member).

SEMANTIC will publish a white paper, led by NOKIA, to identify the project contribution and state open issues, targeting to influence policy-makers, regulators and experts. This white paper will be also articulated in the 5GPPP and IEEE Future Networks Initiatives.

4.4 Standardization

SEMANTIC targets at a significant impact on 5G standardization, fully leveraging the leading role of SEMANTIC partners in relevant standardization bodies (e.g. TLN in IETF/IRTF, NI and NOKIA in 3GPP, POLITO and CTTC in ETSI, NOKIA and EUR in NGMN), setting the ambitious aim to achieve at least 6 impactful contributions in relevant standards and 6 presentations/posters in workshops/meetings organized by these bodies. **1) IETF** (Internet Engineering Task Force): TLN (IETF group member) is committed to contribute in the traffic engineering and signaling (TEAS) working group (WG) with research outcomes on inter-slice control, **2) 3GPP**: NI will process the results on MIMO/beam management to contribute in 3GPP RAN WG1 (NI is group member with focus on MIMO) and 3GPP RAN WG2 (NI is group member with focus on beam management). Also, NOKIA will further contribute to SA5 on management operations for network virtualization and SFC. **3) ETSI** (European Telecommunications Standards Institute): NI will contribute to the ETSI mmWave Transmission (mWT) group with results of his/her study for high band utilization/interference modelling (Table 3.1.d). POLITO and CTTC (active ETSI members) are also committed to promote POLITO-1 and CTTC-1 contributions in ETSI MEC on MEC/RAN integration and location-based service continuity. **4) IRTF** (Internet Research Task Force): TLN will integrate outcome of his/her work on the joint orchestration of MEC/RAN resources to the IRTF Network



Management (TLN is group member), **5) ITU:** Nokia will contribute to the new ITU-T focus group on “ML for Future Networks including 5G” (FG-ML5G) with his/her outcome on data-driven prediction for SFC in MEC/RAN, **6) NGMN** (Next Generation Mobile Networks): NOKIA (NGMN contributor) and EUR (NGMN advisor) will analyse the results on e2e integration (WP4), to contribute (e.g. white papers) in the Network Management & Orchestration and the 5G Trial & Testing Initiatives.

4.5 Industrial Dissemination Days (IDDs)

Two IDDs will be organized, enabling ESRs to present results to industrial experts, potentially exploiting co-location of flagship events organized by the SEMANTIC partners (e.g. NI Week conference, NOKIA Hackathon) to provide valuable networking and feedback to the ESRs while maximizing the project visibility. During the IDDs, industry-focused keynotes will be presented, while sessions for oral, poster and demo presentation will be organized. Through IDDs, all ESRs will be given the opportunity to apply theoretical knowledge and skills to significant practical problems, further to establishing links with other industry and academic partners (e.g. for fostering new career opportunities and future collaborations).

4.6 Organization of Workshops and Conferences

SEMANTIC will organize two workshops (on M20 and M34) and one conference (on M42), which will be open to academic and industrial communities and co-located with important IEEE conferences (e.g., ICC, GLOBECOM, EuCNC, CAMAD, etc.), aiming to disseminate a unified view of all the project achievements. ESRs will present their results in the workshops, receiving valuable feedback for their research. All project achievements will be shown at the final conference. It is expected that around 100 people will attend each workshop while more than 300 people will attend the conference.

4.7 Participation in IEEE Technical Committees (TC)

TCs foster different forms of information exchange in multidisciplinary fields of wireless networking (e.g., standardization, workshops). SEMANTIC will be present at IEEE TCs, e.g. by creating special interest groups, exploiting the active participation of the consortium in IEEE TCs (e.g., CTTC is officer of the IEEE Communications Systems Integration and Modelling – CSIM TC). ESRs will become members of relevant TCs and attend meetings co-located with IEEE flagship conferences (e.g., ICC, GLOBECOM, etc.) to present and discuss steps toward standardization. It is expected that the ESRs will attend one meeting per year.

5. Communication and public engagement strategy

5.1 E-newsletters

E-newsletters with the project achievements (e.g., novel technologies), events organized (e.g., training schools, workshops) and the societal benefits of providing high speed communications, will be distributed to different mailing lists and made available via the project website. Short interviews with the ESRs will show the impact of the multidisciplinary Network in his/her career/excellence/life. A new issue will be released every three months starting from M10 and ESRs will be involved in the preparation of them.

5.2 Broadcast media

Three TV/radio interviews (M13, M26, M42), and at least one visit of a recognized EU or local politician in the lab facilities of beneficiaries (followed by the press) will be targeted by SEMANTIC (M37), aiming at maximum visibility of the project at the public at large, communicating the impact of EU-funded research and 5G and beyond networks to the life of EU citizens. The objective is to inform public audience about: i) benefits – scientific excellence, new products & services – for setting up a collaborative Network of young researchers hosted by 10 different institutions, and ii) how people's interaction with the Internet will change and will open up new kinds of intelligent analytics ready to be harnessed for tangible business and everyday life benefits.

5.3 Brochures and leaflets

SEMANTIC will issue five brochures summarizing the activity, innovations and potential impact of the SEMANTIC solutions and 5G in the daily life of EU citizens, in a more open and less scientific way. Brochures will be available in English, Spanish, Greek, French, German and Swedish and will be disseminated to city councils, local universities, schools, recreational areas, etc., at M4, M12, M24, M36, M48. Through this channel, SEMANTIC aims to reach in total 10K individuals of the general public.

5.4 Online/printed Press

Four articles will be published in national/local (e)-newspapers to inform the general public (e.g., *El Pais* in Spain with 220k readers, *Protothema* in Greece with 7M visits per month), and university magazines (e.g. «το Καποδιστριακό» by UOA), on the societal benefits, scientific excellence, new products and services of the SEMANTIC consortium at M13, M25, M36 and M42.

5.6 Industrial Exhibitions

The key ESR innovations will be presented through stands/demos of working testbeds in at least three industry-attended events (e.g., Mobile World Congress-110k visitors, 5G World-10k visitors), or events organized by the EC (e.g. 5G Summit, RAN World) and the project partners (e.g. NI Week conference) at M25, M33, M40. This activity will increase the awareness of the industrial stakeholders and operators on the SEMANTIC results.

5.7 White paper

SEMANTIC will publish a white paper (M30), led by NOKIA, to identify the project contributions and state open issues, targeting to influence policy-makers, regulators and experts. The white paper will be also articulated in the 5GPPP and IEEE Future Networks Initiatives.

5.8 Open Days

SEMANTIC will organize 3 open days around M16, M26, M36, collocated with existing events (e.g., Fete de la science in EUR, Science Week in CTTC, International Science Festival in Gothenburg, EU Researcher's Night), with a target 300-400 audience of students, engaging students in a research environment and to familiarize with EU-funded actions. Experimental demonstration, hands-on sessions an applied example will be prepared by the ESRs. Locals and young students will be invited to familiarize themselves with the research activities performed by and provide valuable feedback to the ESRs through questioners.

5.9 Social media

The two-way access between the project partners and the public audience will be enabled via the use of several online social media sites (e.g., Twitter, Facebook, LinkedIn, YouTube). The ESRs will regularly contribute to publish announcements and initiate discussions on topics of the project starting from M9. The content will be updated in systematic regular basis (at least monthly updates) and the obtained feedback (comments, ideas, opinions, etc.) will heavily influence project's directions and decisions.

5.10 Multimedia content

SEMANTIC will set up a YouTube channel for the project, including i) four trailers on plans, activities, and achievements of the project (M12, M24, M36, M42), ii) at least one interview per ESR communicating his/her experience from the participation in MSCA actions, summarizing recent achievements (M39), iii) at least one interview per beneficiary, highlighting how EU-funding and SEMANTIC promotes academic/ industrial innovation (M32). The material will be also made available through the project website.

5.11 Public talks

Each ESR will give 3 public talks (M18, M30, M42) at different local associations, universities, science festivals, high-schools, etc. ESRs will explain open issues in a didactic manner (with examples and hands-on activities) to promote fruitful discussions to explain the research carried out in the project and generate interest for science and technology. The target audience is a multidisciplinary public with interest in Science, Technology, Engineering and Math (e.g., STEM program in Greece). During the talks the ESRs will encourage the audience participations through interactive, multimedia presentations. The attendees will be asked to fill out questionnaires to get feedback about the content and its applicability in real life scenarios.

5.12 Semantic hackaton

The SEMANTIC partners will adapt the context of existing Hackathons events organized by them (e.g. POLITO organizes the MEC ETSI Hackathon in Turin, NOKIA has its own Hackathon event) to organize two comprehensive events on MEC-empowered service provisioning (M22) and 5G network automation (M35) with wide participation of programmers, engineers, students and others.

5.13 Café science

Four cafe science events will be scheduled along with some training activities (e.g. workshops, plenary meetings) in informal setting at public areas (e.g., cafe, pubs, etc.) at M18, M26, M34, M42, where the ESRs will make a short presentation about their work

6. Conclusion

The central aim of this deliverable was to give a detailed view of the dissemination activities that will be undertaken by the SEMANTIC project. This not only includes the tradition dissemination routes, but also wider exploitation of results, including standardisation, and engagement of the general public.

The report is a living document, i.e. it will evolve during the course of the project, providing additional information on both overall and individual dissemination/exploitation activities.