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ESFR-SMART

Research and Innovation Action (RIA)

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<http://esfr-smart-h2020.eu>



Communication action plan

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European Sodium Fast Reactor Safety Measures Assessment and Research Tools Roger Garbil

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Summary

This Communication action plan outlines all the activities that will be carried out to promote ESFR-SMART during the 48 months of the project. As stated in this document, this Plan will be updated and improved based on the monitoring results collected, in order to reach the objectives that have been set.

Approval

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1 Introduction

Communication and dissemination activities have become a top priority in European collaborative research projects funded under the EU's Horizon 2020 programme.

The main purpose of this deliverable is to describe the communication and dissemination strategy of ESFR-SMART, and to give more visibility to the entire process. This document includes a section on the context of the project and lists the communication objectives, the target groups and the key messages. The document also defines the tools used to communicate with the audience and to disseminate the project's results.

The scope includes all actions taken in and outside the project, in terms of knowledge dissemination and public communication on the project and its results. These communication actions will be continuously monitored and updated in this document during the project.

2 Context and objectives of the project

To improve the public acceptance of nuclear power and secure its future role in Europe, the significantly higher safety of new reactors compared to traditional reactors has to be demonstrated. As a follow-up to the FP7 CP-ESFR project, ESFR-SMART (European Sodium Fast Reactor Safety Measures Assessment and Research Tools) focuses on the GIF goals that relate to safety. It is aligned with the ESNII roadmap and will be carried out in close cooperation with the ASTRID programme.

The project will take the large-power (1500 MWe / 3600 MWt) sodium cooled fast reactor concept a step further, using the outputs of the SPX2, EFR and CP-ESFR projects and using the Generation-IV International Forum objectives as a target.

Compared to the traditional light water reactors (LWRs) and sodium fast reactors (SFRs), the new reactor should be able to reprocess its own and legacy waste, exclude fuel enrichment, be more reliable in operation, more environmentally-friendly, more affordable, and better protected against proliferation. Last but not least: the new reactor should be safer than traditional LWRs and SFRs. The implementation of this new safety level in the ESFR reactor concept is one of the main challenges that will be tackled in the project.

The project aims at 5 specific objectives:

- Produce new experimental data in order to support calibration and validation of the computational tools for each defence-in-depth level
- Test and qualify new instrumentations in order to support their utilisation in the reactor protection system
- Perform further calibration and validation of the computational tools for each defence-in-depth level in order to support safety assessments of Generation-IV SFRs, using selected data produced in the project as well as legacy experiments and SFR operational experience
- Select, implement and assess new safety measures for the commercial-size ESFR, using the GIF methodologies, the FP7 CP-ESFR project legacy, the calibrated and validated codes and

being in accordance with the update of the European and international safety frameworks taking into account the Fukushima accident

- Strengthen and link together new networks, in particular, the network of the European sodium facilities and the network of the European students working on the SFR technology in order to support the new data acquisition as well as the SFR-related education and training

3 ESFR-SMART brand

3.1 *Visual identity*



Figure 1: ESFR-SMART logo

One of the first actions in the communication task was to develop the project's visual identity. To build its 'brand recognition', a logo was designed during the first month of the project. It is, and will be associated and included, in all documentation (paper or electronic), and promotional materials.

The logo guarantees the identity of the project. To achieve this, several logo versions were designed and examined, with the aim to represent as best as possible the project in the simplest and clearest way.

To illustrate the concept of fast reactors, the phoenix was chosen as the symbol for the ESFR-SMART logo. Indeed, the phoenix is a recognisable symbol for fast reactors in the nuclear community, due to its reference to the French Phoenix fast reactor.

3.2 *Project presentation*

A presentation template was designed and distributed to all the partners within the first month of the project, to continue building the ESFR-SMART brand.

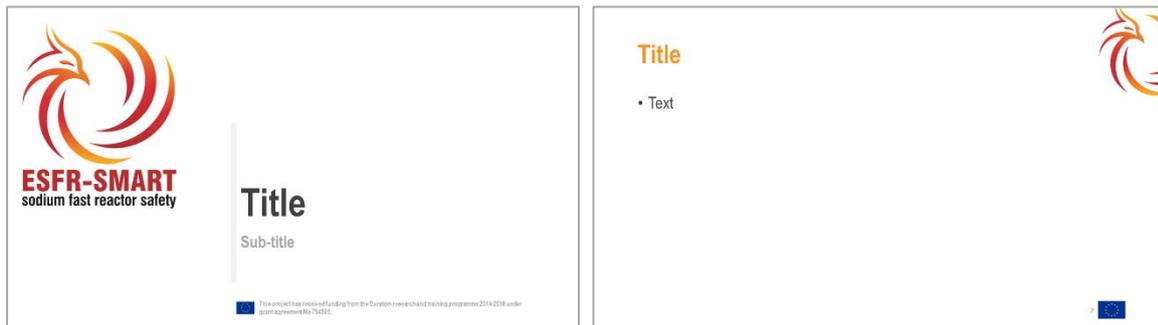


Figure 2: ESFR-SMART presentation template

3.3 Other brand material

- **Flyer:** a flyer will be designed and distributed at workshops and events organised by ESFR-SMART, as well as in external events. It will include the main message, keywords and consortium members of the project.
- **Poster/Roll-up:** a roll-up/poster will be designed to support the dissemination of the outputs generated in ESFR-SMART. It will be distributed to the project partners, and available for download on the public website of the project.

3.4 Obligations

All materials, including scientific papers and publications produced by the project, must contain the mandatory EU emblem with the following sentence:



This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 754501.

Partners can submit articles to peer-reviewed journals or present communications at conferences on the studies they perform in ESFR-SMART. The sentence below must be used to acknowledge the European Commission's financial support in all publications:

This research is part of the ESFR-SMART project, which has received funding from the Euratom research and training programme 2014-2018 under Grant Agreement No 754501.



For presentations, it is strongly recommended to use the ESFR-SMART PowerPoint presentation template. If for some reason this is not possible, the minimum requirements are to use the ESFR-SMART logo, the European emblem and the acknowledgement sentence above.

4 Communication and dissemination strategy

4.1 Objectives

The ESFR-SMART's communication and dissemination objectives are:

- To promote the project's activities, objectives and the uptake of its results
- To engage in a two-way dialogue with stakeholders and civil society, including external organisations such as the OECD/NEA, IAEA, GIF, etc.
- To raise public awareness and contribute to the public acceptance of nuclear energy via demonstrating a significantly higher safety level of ESFR compared to traditional reactors.
- To disseminate knowledge of SFRs to the project's community and stakeholders including PhD students, post-docs, designers, etc.

4.2 Target audiences

The following audiences have been identified as the main target groups that ESFR-SMART will be addressing through its communication and dissemination activities.

TARGET AUDIENCES
Nuclear research and scientific community
European and international SFR stakeholders, such as GIF, ARDECo, ESNII and IAEA
Nuclear industry, designers
Universities and higher education, PhD students, post-docs
National and European policymakers
General public

4.3 Key messages

An initial set of key messages for ESFR-SMART has been developed to educate and inform the target audiences about the project, its objectives and expected outcomes and impacts. Additional tailored messages will be drafted to promote ESFR-SMART in the most effective way.



Based on the results and analyses carried out in the project, the messages below will be further refined and developed for each audience.

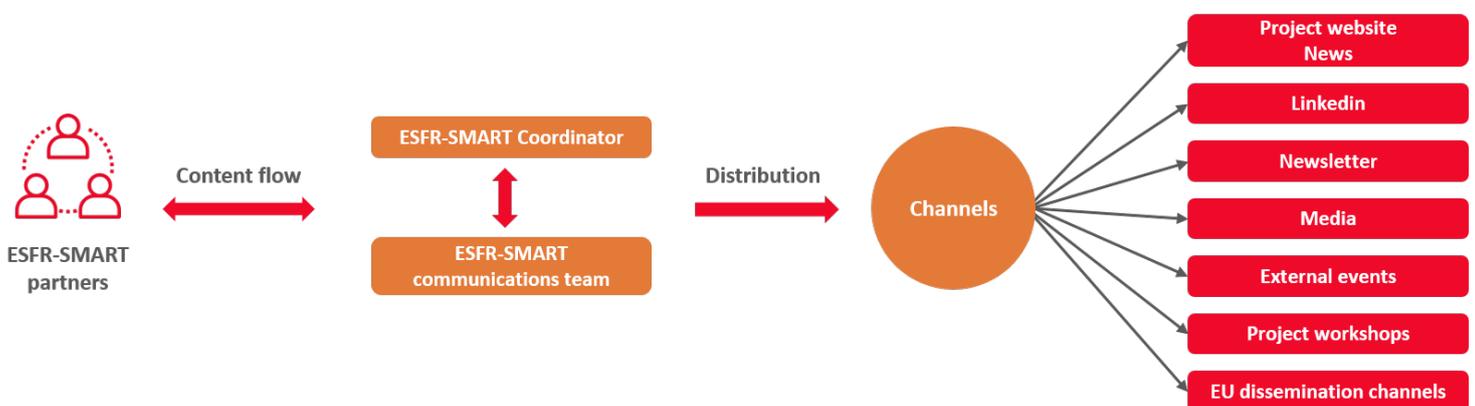
TARGET AUDIENCE	MESSAGE
Nuclear research and scientific community	<ul style="list-style-type: none">• ESFR-SMART will contribute to enhancing the existing knowledge of SFRs stemming from fast reactor programmes in France, the UK and Germany.• The ESFR-SMART project will strengthen the EU's leadership in reactor design, in particular for fast reactors, and will re-establish European cooperation on nuclear safety approaches established in previous EU framework projects (CP-ESFR, JASMIN, ESNII Plus, etc.).• ESFR-SMART will allow Europe to stay at the forefront of the development of Generation-IV SFRs by improving their safety characteristics.
European and international SFR stakeholders, such as GIF, OECD-NEA, ARDECo, ESNII and IAEA	<ul style="list-style-type: none">• ESFR-SMART will contribute to the development of safety standards for the new generation of SFRs by European (e.g. the ASTRID programme) and international (e.g. IAEA and GIF) frameworks.• ESFR-SMART aims to create a unique platform where European and international SFR stakeholders can meet with each other and with European TSOs to take account of the new knowledge related to safety standards generated in the project.
Nuclear industry, designers	<ul style="list-style-type: none">• Technologies developed in this project will make nuclear energy more cost effective and competitive with other carbon-free energy sources.• The work carried out in ESFR-SMART concerning an improved design, the creation of new experimental data and the validation of analysis codes will bring the SFR closer to commercial/industrial viability, reducing the risk of future developments with this technology.
Universities and higher education, PhD students, post-docs	<ul style="list-style-type: none">• ESFR-SMART will contribute to the future development of SFRs by improving educational tools and learning methodologies.• The project will enhance the knowledge of PhD students, post-docs, designers on the safety issues related to the development of Sodium Fast Reactors through workshops.• ESFR-SMART will support doctoral dissertations, related to Sodium Fast Reactor safety and favour the mobility of PhD

	students, post-docs through grants.
European policymakers	<ul style="list-style-type: none"> • The outcomes of ESFR-SMART may contribute to EU energy policies, i.e. safer nuclear fast reactors could better contribute to the future energy mix. • Thanks to the knowledge generated in the project, ESFR-SMART could contribute to helping the EU and its member states develop measures to decarbonise electricity and hence meet their obligations under the Paris Agreement. • Today's reactors will be partly replaced by the next Generation IV reactors. Through the development of the Generation-IV sodium fast reactor, the ESFR-SMART project will contribute to creating jobs.
General public	<ul style="list-style-type: none"> • Nuclear energy plays a significant role in providing reliable, low-carbon electricity. As ESFR-SMART deals with future reactors, it will contribute to the future reduction of the greenhouse gas emissions and thus improve the environment for the next generation. • Thanks to the research carried out in ESFR-SMART on sodium fast reactors, the radioactive waste generated through nuclear energy could be reduced, limiting its impact on the environment. • ESFR-SMART aims to make the next generation of reactors even safer, making nuclear an even more reliable and cleaner source of energy.

4.4 Content and information flow

A simple yet effective process has been set up for content creation and information to be shared through the communication channels described in the next section.

Figure 3: Content & information flow





4.5 Public website

The ESFR-SMART website was officially launched in November 2017. It will be continuously updated and will evolve with the lifecycle of the project, according to the dissemination and communication policy of the project.

It was designed and developed to serve as a dynamic information and communication tool, as well as a platform for the project team. It acts as the main channel for news and updates with the aim to address the key questions that external visitors are expected to have, these include:

- What the project is about
- What the project is delivering, and why
- Who the partners of the project are
- What the main advancements of the project are

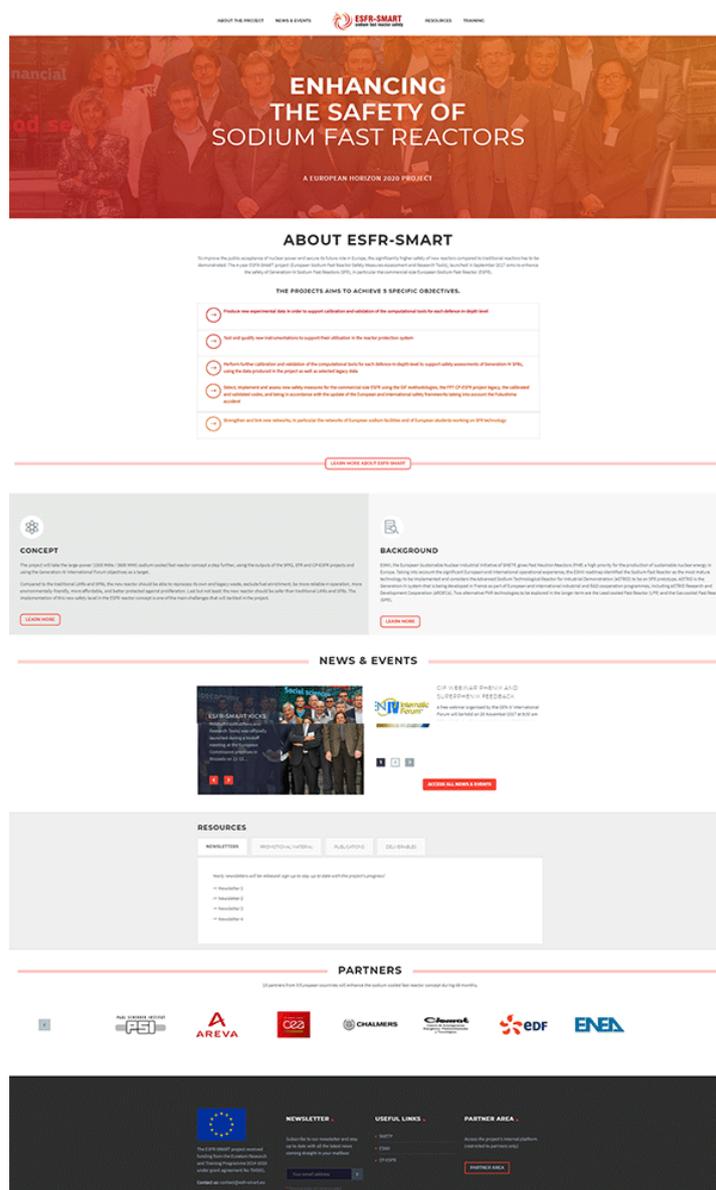


Figure 4: Project website homepage



4.6 LinkedIn

A LinkedIn account was created for ESFR-SMART to showcase the project's activities and promote its events, workshops and public deliverables.

Articles and news about the project will be published here.

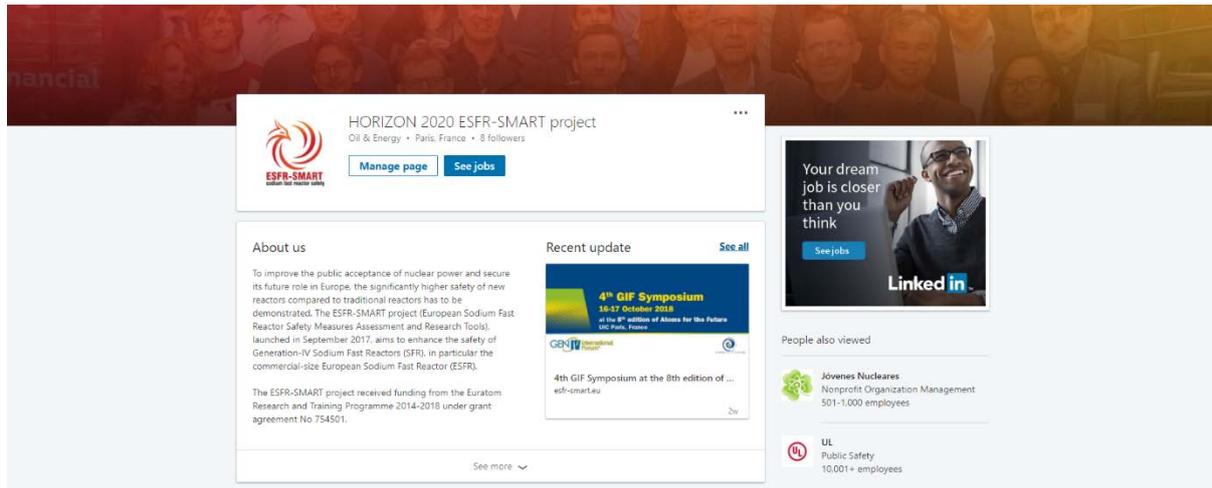


Figure 5: LinkedIn account screenshot

An ESFR-SMART LinkedIn group was also created to engage, interact and exchange with the community.

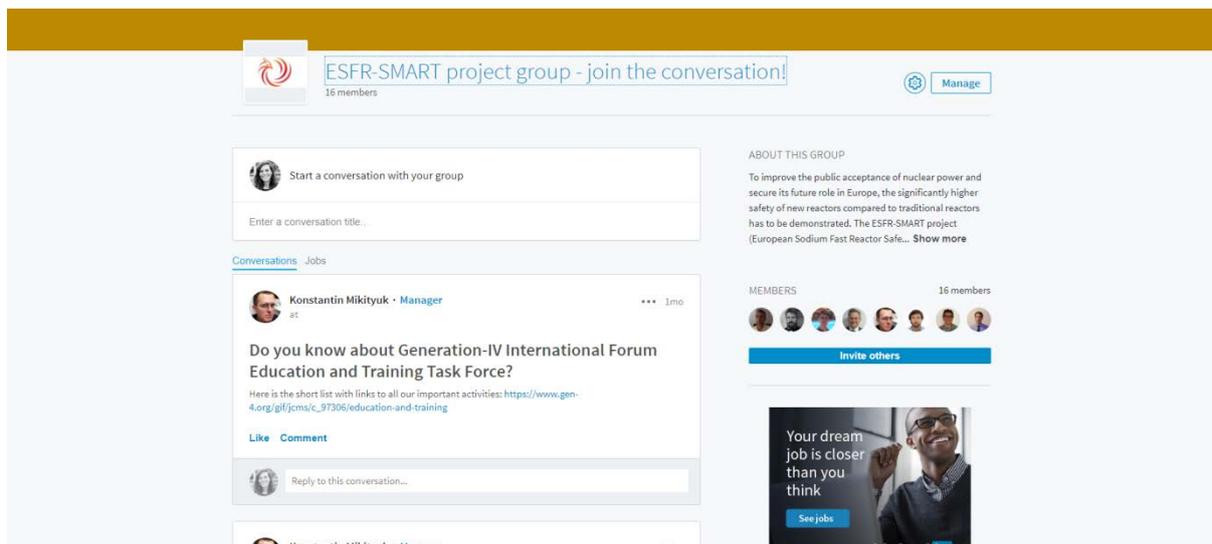


Figure 6: LinkedIn group screenshot



4.7 Newsletters

A total of 4 electronic newsletters are expected to be distributed to the ESFR-SMART community to inform them on the latest achievements of the project, outputs and relevant events, conferences or workshops. Newsletters will be published on a yearly basis.

The results and statistics will be drawn for each newsletter. Conclusions and possible areas of improvement will be also indicated, with the aim to help optimise future mailings.

The first newsletter is planned for September-October 2018, depending on the progress of the project.

4.8 Events

Presenting the project's results at events or booking a stand to disseminate the knowledge acquired is a key action in ESFR-SMART to maximise its impact. It will also help to communicate towards key stakeholders.

As face-to-face communication is the most effective means of communication, the project consortium will attend events that are relevant to the topic and through which target groups can be reached. Attendance at events will be divided among the different project partners. The most appropriate events over a 12-month cycle will be identified and a project partner will be allocated as directly responsible for making contacts with the event organisers and ensuring the project is properly represented.

An event plan was created to monitor the partners' participation and actions in international and national conferences (see Annex).

4.9 Seminars & Summer School

To improve and harmonise the diffusion of the scientific knowledge and results stemming from the project, eight events will be organised during the four years of ESFR-SMART:

- six topical workshops
- one summer school dedicated to students

The workshops will focus on the main safety issues of the SFR reactor system and will offer a discussion and dissemination forum on relevant topics for SFRs to attendees (PhDs, post-docs, designers, stakeholders, etc.) and all potential users. The workshops are considered as an adequate tool to promote an active information exchange among researchers, engineers, suppliers and users. In addition, a visit of relevant facilities will be organised during each event.

The 7 events are:

- Workshop 1 on sodium facilities design and safe operation ENEA Roma La Casaccia (M6)
- Workshop 2 on instrumentation for safety HZDR Dresden (M12)
- Workshop 3 on liquid metal thermal hydraulics and fuel safety UPM and CIEMAT, Madrid (M18)
- Workshop 4 on deterministic modelling of nuclear systems Chalmers University, Göteborg (M24)
- Workshop W5 on magneto-hydrodynamics in liquid metal systems IPUL Riga (M30)



- Workshop W6 on prevention, management and mitigation of SA in SFR CEA Cadarache (M42)
- Summer School on SFR at University of Cambridge (M36)

4.10 Scientific publications

A number of scientific publications will be prepared.

The project will also follow the open access policy of Horizon 2020 by providing online access to scientific information that is free of charge to the end-user and that is reusable. In the context of this project, scientific information refers to peer-reviewed scientific research articles (published in scholarly journals), articles, conference papers and research data. As such, the project will combine different measures to foster open access to knowledge as much as possible.

Three scientific papers have already been published since the start of the project:

Authors	Title	Reference
K. Mikityuk, E. Girardi, J. Krepel, E. Bubelis, E. Fridman, A. Rineiski, N. Girault, F. Payot, L. Buligins, G. Gerbeth, N. Chauvin, C. Latge, J.-C. Garnier	ESFR-SMART: new Horizon-2020 project on SFR safety	IAEA-CN245-450, Proceedings of International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable, Development FR17 conference, 26-29 June 2017, Yekaterinburg, Russia
S. Mambelli, K. Mikityuk and A.-L. Panadero	Chugging boiling in low-void SFR core: new phenomenology of unprotected loss of flow	IAEA-CN245-451, Proceedings of International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable, Development FR17 conference, 26-29 June 2017, Yekaterinburg, Russia
J. Bodi	Development of CAD model for the European Sodium Fast Reactor for the use of TRACE thermal hydraulic code	MS thesis, University of Birmingham (UK), Paul Scherrer Institut (Switzerland), September 2017

4.11 Final conference

A final conference will be organised at the end of the project to disseminate the results and lessons learned of the ESFR-SMART project. It will be held at PSI and will present:

- the SNETP platform and recent activities
- the status of ASTRID and other international activities dedicated to SFRs
- the main results of the ESFR-SMART project: each work-package will describe the main results obtained in support to the development of the European FOAK SFR.

In conclusion, new perspectives will be discussed and synthesised. Visit of the PSI Hot Laboratory will be organised during this event.



4.12 European dissemination channels

The official channels set up by the EU institutions will be used if relevant to disseminate the project's results. The following official EU dissemination channels will be targeted:

Magazines	Research*eu results magazine	www.cordis.europa.eu/research-eu/home_fr.html
	Horizon – The EU Research and Innovation Magazine	https://horizon-magazine.eu/
Portals	CORDIS	www.cordis.europa.eu/home_fr.html
	Horizon 2020 newsroom	www.ec.europa.eu/programmes/horizon2020/en/newsroom

4.13 Key Performance Indicators

Channels	KPIs
Website	<ul style="list-style-type: none">• Number of page views• Average time on page
LinkedIn	<ul style="list-style-type: none">• Number of views/interactions• Number of followers• Number of articles/posts
Newsletters	<ul style="list-style-type: none">• Number of subscribers
Media	<ul style="list-style-type: none">• Number of articles published about ESFR-SMART
ESFR-SMART final conference	<ul style="list-style-type: none">• Number of attendees
Events	<ul style="list-style-type: none">• Number of conferences where ESFR-SMART was presented
Publications	<ul style="list-style-type: none">• Number of papers published
EU channels	<ul style="list-style-type: none">• Number of mentions• Number of articles published about ESFR-SMART

5 Conclusion

The ESFR-SMART Communication action plan will be updated regularly. Its content and structure may evolve if necessary. Its main objective is to maximise the impact of the project and boost awareness on the results and milestones to be accomplished during the project.



6 Annex

ESFR-SMART conference monitoring plan

ANNEX
CALENDAR OF EVENTS



Start	End	Description	Venue					
03/09/2017	08/09/2017	NURETH-17	Xi'an, Shaanxi, China	http://www.nureth17.com				
29/10/2017	02/11/2017	ANS Winter Meeting	Washington, DC, USA	http://www.ans.org/meetings				
08/04/2018	11/04/2018	ICAPP18	Charlotte, NC, USA	http://www.ans.org/meetings/m_279	Summary: 15.12.2017	Full paper: 12.01.2018		
22/04/2018	26/04/2018	PHYSOR-2018	Cancún, México	http://www.physor2018.mx/	No summary	Draft paper: 30.11.2017	Final paper: 28.02.2018	
13/05/2018	18/05/2018	BEPU-2018	Lucca, Italy	http://www.nineeng.com/bepu	Abstract: 31.08.2017	Draft paper: 10.12.2017		
17/06/2018	21/06/2018	ANS Annual Meeting	Philadelphia, PA, USA	http://www.ans.org/meetings/c_1	Summary: 31.10.2017 – 12.01.2018	No paper		
22/07/2018	26/07/2018	ICONE26	London, UK	https://www.asme.org/events/icone/	Abstract: 30.11.2017	Draft paper: 21.01.2018		
30/09/2018	05/10/2018	PBNC2018	San Francisco, CA, USA	http://www.ans.org/meetings/c_2	Abstract: 15.10.2017	Draft paper: 01.04.2018		
14/10/2018	18/10/2018	NUTHOS-12	Qingdao, China	http://www.nuthos-12.org	Abstract: 30.11.2017	Full paper: March 30, 2018		
16/10/2018	17/10/2018	GIF Symposium	UIC, Paris, France		Abstract: 31.12.2017	Full paper: March 31, 2018		
11/11/2018	15/11/2018	ANS Winter Meeting	Orlando, FL, USA	http://www.ans.org/meetings	Summary: 10.06.2018 (?)			
15/04/2019	19/04/2019	ICAPP19	Juan les Pins, France	http://www.ans.org/meetings/c_3				
09/06/2019	13/06/2019	ANS Annual Meeting	Minneapolis, MN, USA	http://www.ans.org/meetings				
18/08/2019	29/08/2019	NURETH18 + M&C	Portland, OR, USA	http://www.ans.org/meetings/c_2				
22/09/2019	27/09/2019	Global + Top Fuel 2019	Seattle, WA, USA					
17/11/2019	21/11/2019	ANS Winter Meeting	Washington, DC, USA	http://www.ans.org/meetings				