



European Training Network on  
Safer Autonomous Systems (SAS)

**D5.2 – Dissemination, communication and outreach strategy**

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## 1. Introduction, overview and objectives of the SAS Project

The coming of autonomous systems doesn't just mean self-driving cars. Advances in artificial intelligence will soon mean that we have drones that can deliver medicines, crew-less ships that can navigate safely through busy sea lanes, and all kinds of robots, from warehouse assistants, to search-and-rescue robots, down to machines that can disassemble complex devices like smartphones in order to recycle the critical raw materials they contain.

As long as these autonomous systems stay out of sight, or out of reach, they are readily accepted by people. The rapid and powerful movements of assembly-line robots can be a little ominous, but while these machines are at a distance or inside protective cages we are at ease. However, in the near future we'll be interacting with "cobots" – robots intended to assist humans in a shared workspace. For this to happen smoothly we need to ensure that the cobots will never accidentally harm us. This question of safety when interacting with humans is paramount. No one worries about a factory full of autonomous machines that are assembling cars. But if these cars are self-driving, then the question of their safety is raised immediately. People lack trust in autonomous machines and are much less prepared to tolerate a mistake made by one. So even though the widespread introduction of autonomous vehicles would almost eliminate the more-than 20,000 deaths on European roads each year, it will not happen until we can provide the assurance that these systems will be safe and perform as intended. And this is true for just about every autonomous system that brings humans and automated machines into contact.

### Trust matters

If deployed tomorrow, existing self-driving cars would have many fewer accidents than those driven by humans. But this doesn't mean that people are ready to hand-over the steering wheel. We tolerate many thousands of deaths on the road every year, but the first crash involving two full-autonomous vehicles that results in a fatality will be headline news all over the world. And then what? Will there be a public outcry? Will gangs come with pitchforks to smash the machines? Will self-driving cars be like the Hindenburg disaster and airships? Autonomous vehicles, indeed all autonomous systems, need to be made safe enough so that people trust them. The destination, therefore, is clear; the route, however, is a difficult one. The Safer Autonomous Systems ITN project is designed to get us to our destination, safely.

Until now, safety assurance has been integrated into the design processes, based on safety standards and demonstrating compliance during the system's test phases. However, existing standards are developed primarily for human-in-the-loop systems, where a human can step in and take over at any time.



They do not extend to autonomous systems, where behavior is based on pre-defined responses to a particular situation. What's more, current assurance approaches generally assume that once the system is deployed, it will not learn or evolve.

On the one hand, advances in machine learning mean that autonomous systems can be given the potential to learn from their mistakes, and the mistakes of all the systems they are connected to, making their abilities to operate safely infinitely better than previous generations. On the other, machine learning means more uncertainty about how the system will decide to react to a particular circumstance in the future, making safety assurance a hard task, which can only be accomplished by a highly-skilled, interdisciplinary workforce.

Are you ready yet, to take a seat on an autonomously controlled airplane? If you hesitate to say "yes", then you are tacitly acknowledging the need for a training and research programme such as the **Safer Autonomous Systems ITN**.

### **ETN SAS Project: Goal and Objectives**

The SAS Project focuses on ways to be identified in such a way that this establishes people's trust in autonomous systems by making these systems demonstrably safer. In order to achieve this main objective, we have identified 3 specific challenges, which are very briefly described as follows:

1. Design autonomous systems in such a way that they remain safe under all conditions, even in the case of component failures.
2. Develop breakthrough solutions to guarantee the rigor of virtual model-based testing of autonomous systems and to optimize its overall coverage.
3. Assure safety throughout the life time of the autonomous system so such that safety goals are met continuously.

SAS's scientific and technical (S/T) sub-objectives to overcome the 3 challenges mentioned above and thus to achieve the main S/T objective are to:

1. Integrate guaranteed acceptably safe behaviour directly into the architecture/design of the autonomous system;
2. Prove by model-based safety-analysis techniques that the behavior of an autonomous system remains acceptably safe under all possible conditions;
3. Ensure that the safety-assurance strategies that combine the architectural/design measures with the evidence allow us to have trust in the autonomous system, which is very likely to be learning and evolving.



The European Training Network for Safer Autonomous Systems (SAS, **Figure 1**) provides a concerted effort to overcome the triple challenge described above. The SAS Beneficiaries are 3 high-technology companies, Bosch (GE), MIRA (UK) and RH Marine (NL), 2 non-university research institutes, LAAS (FR) and FHG (GE), and 2 universities, KU Leuven (BE), UoY (UK).

The SAS Consortium is completed by 10 Partner Organizations that include 9 companies and 1 university. This gives SAS some of the best and most relevant of European industry and the key academic players, guaranteeing not only an exciting interdisciplinary, intersectoral research-and-training programme, but also a head-start for bringing about trust in autonomous systems.

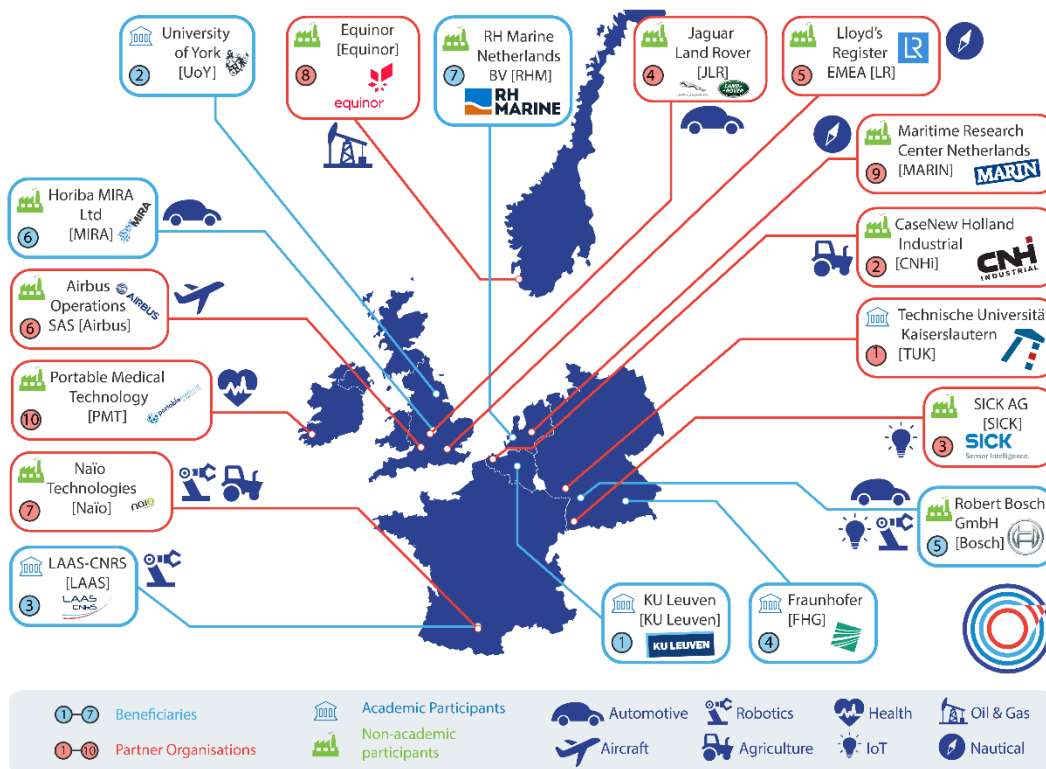


Figure 1: SAS Work Package List

The SAS project is based on 6 Work Packages (WPs), three of which are S&T WPs (WP1–3), one for training (WP4), one for Exploitation, Dissemination and Communication (WP5) and one for Management (WP6).

The S&T WPs are organized along 3 research tracks covering the 3 main steps in the safety-assurance process: (i) building safety and dynamic risk mitigation into the system by design, (ii) gathering evidence that the behaviour of the system will actually be safe, and (iii) combining these into a clear strategy that allows us to put our trust in the system.



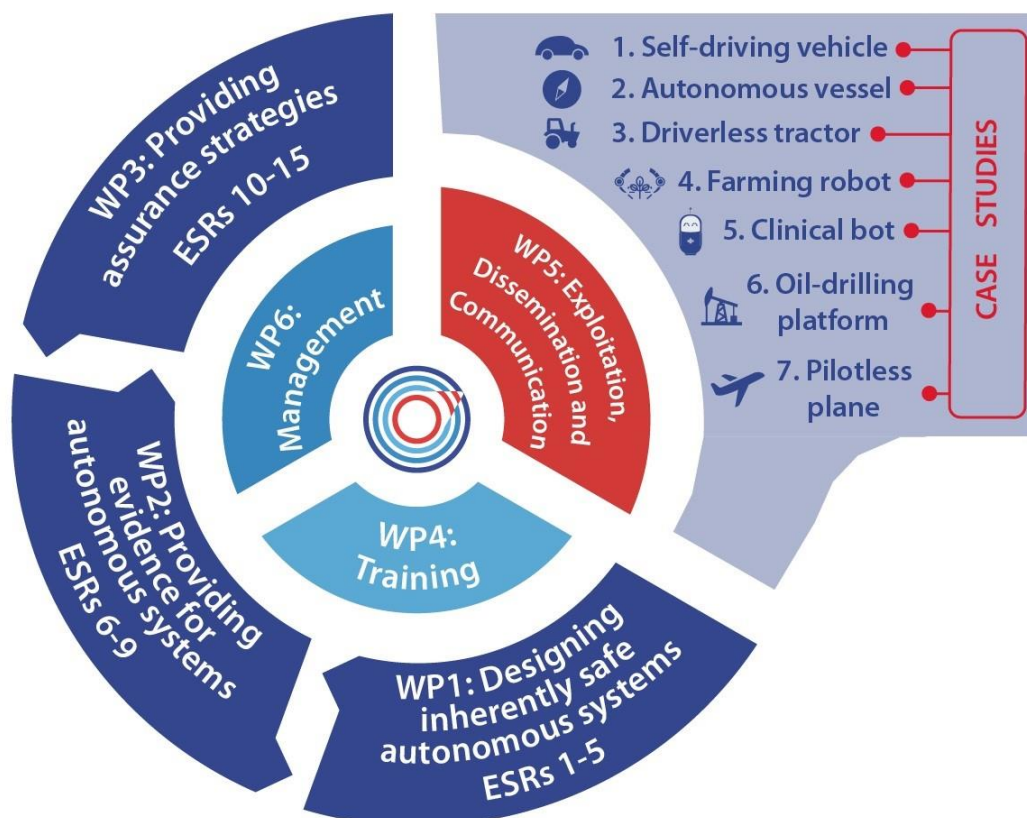
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All the WPs are listed in **Table 1**, with the WPs shown schematically in **Figure 2**, together with the 7 case studies that are central to the programme.

**Table 1:** SAS Work Package List

WP No.	WP Title	Lead Benef. No.	Start Month	End month	Activity Type	Lead Benef.	ESR involvement
1	Designing inherently safe autonomous systems	4	7	42	Research	FHG	ESR1–ESR5
2	Providing evidence for autonomous systems	5	7	42	Research	Bosch	ESR6–ESR9
3	Providing assurance strategies	2	7	42	Research	UoY	ESR10–ESR15
4	Training	3	7	48	Training	LAAS	All ESRs
5	Exploitation, Dissemination and Communication	6	1	48	Dissemination	MIRA	All ESRs
6	Management	1	1	48	Management	KU Leuven	All ESRs



**Figure 2:** SAS Work Package Overview



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## 2. Dissemination, communication & outreach plan

### 2.1. Summary

This dissemination and communication plan has been developed within WP5 of the SAS Project to address, in a coordinated way, all the specific dissemination and communication needs for the project itself and the specific work packages. This dissemination and communication plan will be reviewed regularly (an action item at each Network Wide Event) and updated if necessary, to ensure the dissemination and communication objectives of the SAS Project are met.

### 2.2. Dissemination and communication strategy

The SAS Consortium members have every interest in seeing that the project results will be widely disseminated because this demonstrates the wider acceptance of the importance of making autonomous systems safer. Therefore, various dissemination and communication activities are planned and already implemented, in order to spread the project results not only to identified groups of interest but also to the general public. The SAS key stakeholders will be able to contribute, act and react to the project results in a timely matter.

#### Dissemination & communication activities: Objectives

- Create awareness of the importance of safer autonomous systems to society and to raise awareness of the Marie Skłodowska Curie funding and actions.
- Inform and update fellow researchers, professionals and the general public about the project results. This will demonstrate that we are the best team for the tasks ahead.
- Proof to professionals that we are the ideal candidates for bilateral (contract) research and future projects.
- Convince journalists that our work deserves wide dissemination through feature articles and interviews.

#### Target Audience

The target audience is mainly composed of 3 different types of audiences:

1. **Internal and External Scientists:** through conferences, seminars and scientific papers, stimulating the awareness on the technical achievements. The content can be specialized and oriented to a restricted network of experts in the field (academia, sector industries).



2. **National and EU policy makers:** through dedicated papers. The outcome is expected to be executive and concise, oriented to delivering the figure on the techno-economic advantages provided by the project and to address the industrial benefits.
3. **The General Public:** through web releases, leaflets and public communication. The interest is to reach the widest audience, in order to generate awareness through simple facts and figures.

### 2.3. Dissemination and communication plan: Activities

The following Dissemination and Communication Activities are part of the SAS Project:

**1. Project Website:** A public website has been developed, <https://etn-sas.eu>, where any generated knowledge of direct value to the industry, project deliverables, events and articles are published to stimulate their exploitation and dissemination. Furthermore, the SAS project abstract and SAS work packages are described on this website. The ESRs write Blogs on a regularly basis and those are published on the SAS Website and further disseminated through Social Media.

**2. Social Media:** Social Media, such as LinkedIn, Facebook and Twitter, are used to provide regular updates regarding the SAS project and to present the achieved results in a didactic way. At the SAS Kick-off Event on July 2<sup>nd</sup> 2019, a special taskforce has been set up during the ESRs Researchers Council where some ESRs have been appointed as responsables for the above mentioned social media. An overview of this taskforce is given in the table below:

Facebook	Twitter	LinkedIn	Blogging
Zaid Tahir (York)	Yuan Liao (Fraunhofer)	Joao Vitor Zacchi (Fraunhofer)	Joao Vitor Zacchi (Fraunhofer)
Dejana Ugrenovic (KU Leuven)		Hassan Tirmizi (KU Leuven)	Ahmad Adeeb (Bosch)
			Orian Dheu (KU Leuven)

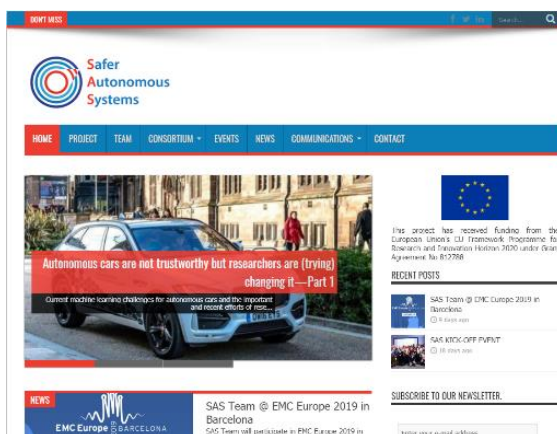
All ESRs are regularly encouraged to actively engage in SAS social media activities.

**3. Publications in Peer-reviewed Scientific Journals:** The dissemination of SAS project results for the scientific and academic community is ensured by publications in peer-reviewed scientific journals. Examples include, but are not limited to, Safety Science (Elsevier), IEEE Trans. on Reliability, IEEE Trans. on Software Engineering, Robotics and Autonomous Systems (Elsevier). Each ESR has the goal to publish at least two articles in such journals.



4. **Presentation, workshops and tutorials at International Conferences:** Further dissemination of the SAS project results is ensured through the participation of the ESRs in international conferences. Examples include, but are not limited to, DSN, SAFECOMP, SCSC, ARES, CPS-week, EDCC. Every ESR will have to present his/her results at least twice at such conferences.
5. **Press releases:** Contribution of SAS to societal challenges foreseen in every involved country.
6. **SAS Co-Thinking Sessions** (during future NWE 2, 4 and 7): Industrial participants bring a real-world problem to the group of ESRs and challenges them to come up with a workable solution.
7. **SAS Promo Videos:** At least one SAS Promo Video will be developed and published with the collaboration of Storyrunner who is very acquainted with developing Marie Curie/Best Practice Award Winning Videos in collaboration with KU Leuven.
8. **Closing Event:** Near the end of the project, a closing event will be organized to summarize the project results.
9. **Knowledge Transfer:** At the end of the project, each partner will capture the gained knowledge and will continue disseminating ETN SAS project results. This knowledge transfer strategy ensures that the information will not be lost once the project ends and ensures the medium-long term impact of the dissemination. Furthermore, it is expected that this strategy will establish contacts with new potential stakeholders.

## 2.4. Dissemination & communication's Tools and Channels



The main dissemination and communication tool is the brand new developed SAS **website**, available at <https://etn-sas.eu>. The new website, which is online since September 1<sup>st</sup> 2019<sup>1</sup>, will be regularly updated with project events, interesting news events and project results.

SAS Consortium members will link events and papers that are collected and made available to the public audience on the website.

<sup>1</sup> A temporary one has been available between June 27<sup>th</sup> 2018 and September 1<sup>st</sup> 2019.



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**Internal SAS communication** will be disseminated through email and a password-protected intranet (Podio). Next to a platform to enable easy collaboration between all SAS members, the developed intranet will also serve as a storage space for ESRs' PCDPs, RTDEs and Progress Reports. Moreover, this intranet also enables following up on the project, as deliverables, minutes of WP meetings, Mid-term and Final reports (Project Management level), the DMP, NWEs, etc., can also be tracked and stored in the platform.

**Workshops, Tutorials and Special Sessions** will be organized to demonstrate the achieved results and to create the opportunity to meet potential interested clients, investors and researchers. The target audience will differ from each main event, including different members in the scientific, industrial and social fields (e.g. journalists).

**Flyers and brochures** will be created and distributed via the SAS website and during events organized or attended by the SAS Consortium members.

**Peer-reviewed journal and conference publications** are continuously created. These will be available on the SAS website in a standardized manner (reference method and pdf available).

Similar to peer-reviewed publications, SAS project partners are invited to identify **trade journals and magazines** to send them articles and to present project results. Measures will be in place to assure this dissemination is in accordance with the exploitation plan and to avoid any leakage of IPR that may endanger a patent filing of a result.

Periodic **newsletters** will be sent on a regular basis. A database will keep track to assure each newsletter is addressed to the right audience. New publications will also be included in the newsletters.

During the second year of the project, a **promo video** will be produced. This video will explain the project goals, and present the team and the collaborating partners. This video will be made in collaboration with Storyrunner. They have experience in producing animation films and documentaries, both for national television (Canvas Belgium) and for YouTube.

At the end of the project, a **final report** will be created and made available on the SAS website.

## 2.5. Assessment of the Impact of the Dissemination and Communication Activities

The scope of this assessment is to make sure that the communication activities were carried out as planned and to determine whether or not the communication goals were achieved. In order for persistent and consistent evaluation data regarding the communication activities, two sets of indicators will be used, namely **quantitative** and **qualitative** indicators, briefly explained below.



**Quantitative indicators** evaluate the effectiveness of the communication. For our electronic communication (e.g., website, social media, video) this will be the numbers indicating how many visitors posts, likes, views, followers, tweets, newsletters, etc., are achieved. For physical forms of communication, such as flyers and brochures, this will be the numbers of distributed copies.

**Qualitative indicators** assess the impact of the communication on the target audience. This impact will be measured by the number of returning visitors to the website, duration of the website visit, recipients effectively opening the newsletters and the contained hyperlinks and the number of participants to organized events. The quality of the communication is also measured by the amount of peer-reviewed journal and conference publications.

## 2.6. SAS Project Visual Identity

To achieve the best dissemination and communication results, a transparent recognizable visual identity for the SAS Project is necessary and applicable. The following visual identifications and tools are used for both digital and printed SAS-related dissemination and communication elements:

- **SAS Project Logo**



- SAS Project templates (for power point presentations, scientific conference presentations, newsletters, policy briefs, project reporting and deliverables) see example below.





EU H2020 MSCA-ETN SAS  
KICK-OFF MEETING & NWE  
JULY 2<sup>ND</sup> & 3<sup>RD</sup> 2019

Crowne Plaza, Bruges - BELGIUM

- EU funding acknowledgement



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## 2.7. Open Access to scientific publications

Following H2020's open-access policy and respecting the RRI principles, the SAS Consortium ensures that all peer-reviewed scientific publications from the SAS Project are deposited in open-access repositories, e.g. the OpenAire-compliant Lirias repository of KU Leuven (<https://lirias.kuleuven.be>).

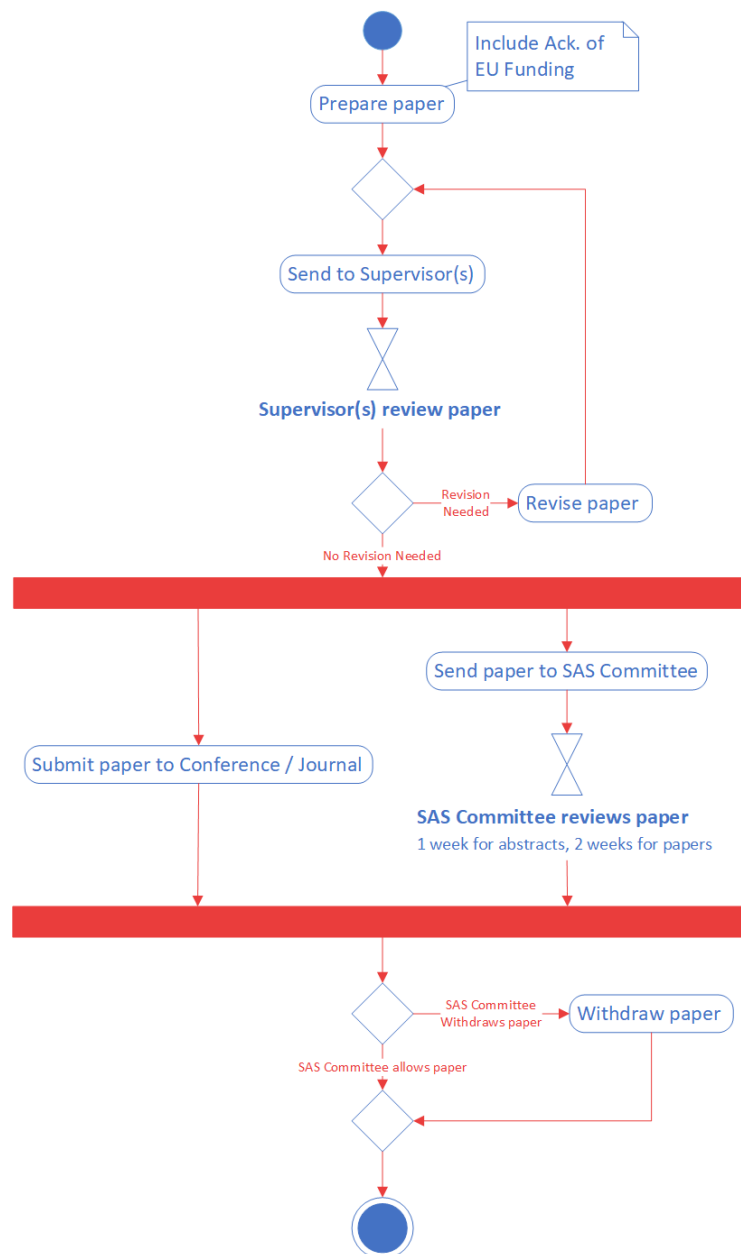
The SAS Supervisory Board watches over and guards Open Access Publishing policy. Policy briefs are written for European policy makers, with the proactive support of the ESRs.



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The Paper Pre-submission Procedure is a part of this plan and the adapted flowchart, unanimous agreed between all SAS members at the SAS Kick-off Event on July 2<sup>nd</sup> 2019 in Bruges, regarding this procedure can be find below:



### 3. Conclusions

SAS scientific and technical results are disseminated to the scientific and restricted network of experts in the field through peer-reviewed scientific journals, presentations, and attendances at international conferences. The SAS Consortium ensures that all peer-reviewed scientific publications from the SAS Project are deposited in open-access repositories. National and EU policy makers will be reached through dedicated papers in order to deliver the techno-economic advantages provided by the project and to address the industrial benefits.

The SAS Outreach Strategy engages the general public through web releases, leaflets and public communication to generate awareness through simple facts and figures. This outreach campaign includes a dynamic and dedicated project website, flyers and brochures, periodic newsletters and a wide range of social media activities (e.g. LinkedIn, Twitter, Facebook, ESRs blogs).

At the end of the project, a final report is written and sent to each partner and to the EU responsible to ensure the medium-long term impact of the dissemination and to capture the gained knowledge to elaborate further ENT SAS project results dissemination. This final report will also be made available on the SAS website.

