

1 Insights from the 2nd TEACHING’s stakeholders’ survey

A clear outline of the TEACHING stakeholders (including their needs and preferences) is an important prerequisite for analysing the context and market for TEACHING. In fact, to gather feedback from end-users/customers early on helps to formulate a strong value proposition and identify optimal communication channels.

The TEACHING stakeholder engagement strategy is thoroughly presented in D6.3 (Section 4). As part of this strategy, and aiming to trigger an interest of primary stakeholders, insights from the TEACHING stakeholder analysis are formulated in this section based on the 2nd Stakeholder Engagement Survey released according to the stakeholder engagement plan presented in D6.3.

1.1 Results

The primary purpose of this [2nd Stakeholders Survey](#) is to investigate which modules of TEACHING platforms is more likely to be used by stakeholders and end users and for what purposes.

The questionnaire was distributed amongst a stakeholder group (external participants) brought by each partner. Due to the GDPR restrictions and reluctance to disclose the company’s information, each of the partners distributed the questionnaire to their relevant contacts.

Overall, **34 responses** were achieved as a result of this survey campaign. The achieved survey answers can be helpful to approximately give us an insight on how companies and organizations could use TEACHING relevant products/tools and reveal their interest in exploring the TEACHING offerings in future. Survey insights are presented below in sections:

1.1.1 1st Section of the Survey: General questions

Q2 - Organizational Role: Aiming to identify the areas of expertise of the survey participants the respondents were asked to indicate the role/position in their organizations. As depicted in Figure 1, the survey participants occupy a variety of roles including Engineer (15% responses), project managers, researcher/senior scientists, professors/faculty members. The list also comprises of PhD student, consultant, SW developers and deputy directors.



Figure 1: Respondents organizational role

Q3 - Demographic information: Figure 2 illustrates the geographical distribution of the respondents. As shown the survey participants are from seventeen (17) EU countries, while the majority of participants are from Italy, Greece and Austria.

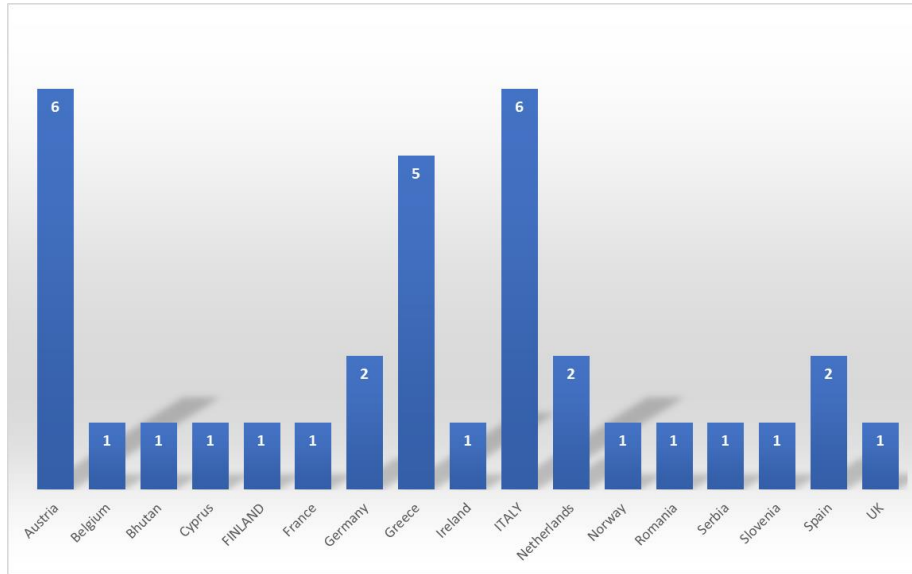


Figure 2: Respondents’ geographical distribution

Q4 - Type of organization: Respondents’ organizations were classified in terms of five categories. Figure 3 indicates, the largest number of respondents represent academic/research institutions (16 respondents), followed by Software suppliers (7 participants) and Automotive industry (5 participants), as well as respondents from automation, maritime and certification.

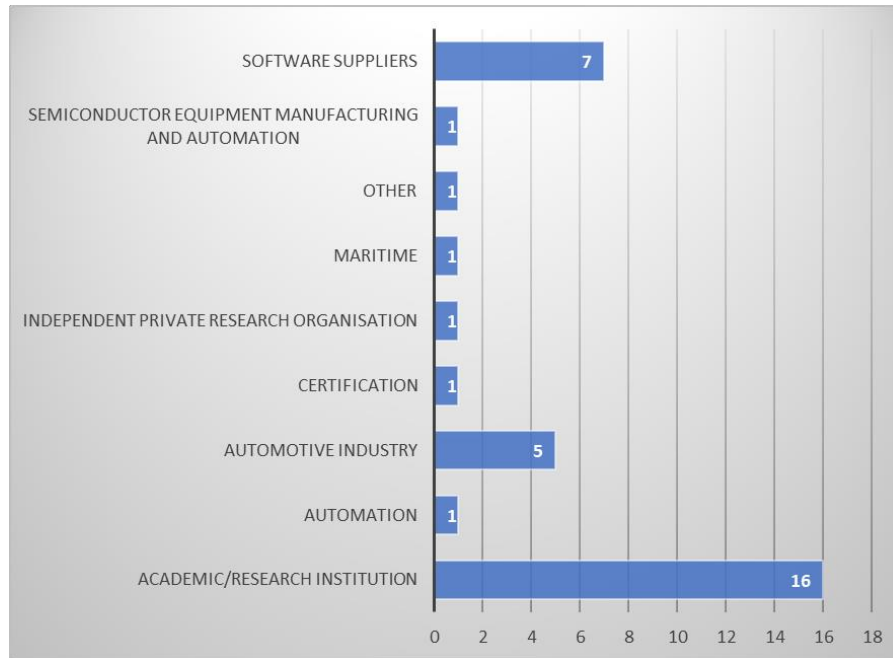


Figure 3: Type of organization

1.1.2 2nd Section of the Survey: Humanistic AI related questions

Humans interact with the autonomous system either as passive end-users of the service being delivered (such as passengers in autonomous transportation), or as active co-operators in a mutual empowerment relationship towards a shared goal (e.g., in industrial assembly lines). Such cooperative, connected and autonomous systems of systems (SoS) have the potential to be a game changer in multiple domains. In TEACHING, we develop our technologies by focusing on human-centric, dependable AI and human-in-the-loop concepts (humanistic AI intelligence). Even when the most advanced degree of autonomy is exercised, the human is a variable which cannot and should not be left out of the equation, especially in safety critical scenarios.

Q5 - In the figure below (Figure 4), the participants stated whether their organisation is aware of the humanistic AI concept. Fortunately, it's positive, as we can see that the bigger percentage (76%), have stated that their company are aware of the humanistic AI concept, while 18% answered "I do not know / I am not sure" and the remaining percentage (6%), answered "No".

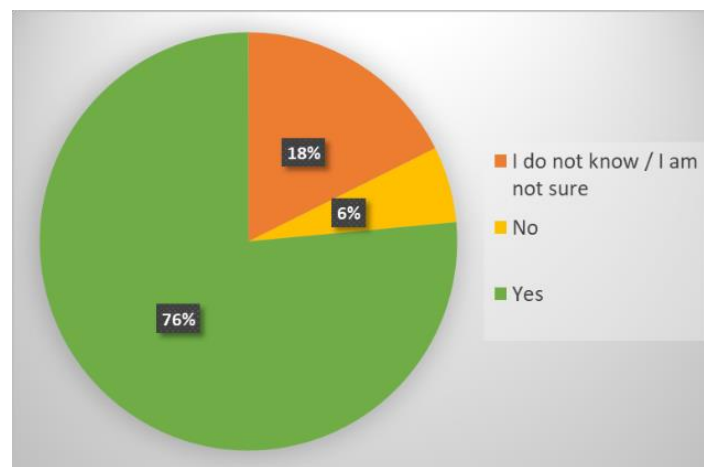


Figure 4: Is your organization aware of the humanistic AI concept?

Q6 - Figure 5 represents the questions whether their organisation use AI human-centric technologies. Here the answers seem that are divided equally within the "I do not know / I am not sure" as we have 27% and the negative answer, "No" as we have 26%. It's really nice to see that the biggest percentage (47%), uses AI human-centric technologies in their organisations.

Research from a Harvard Business Review shows that AI is so much more than just the latest incremental improvement in existing technology, however deploying it effectively takes leadership and coordination across all sectors of a company" (N. R. Sanders, J. D. Wood, 2020).

On the other hand, "Too many business leaders still believe that AI is just another 'plug and play' incremental technological investment. In reality, gaining a competitive advantage through AI requires organizational transformation of the kind exemplified by companies leading in this era: Google, Haier, Apple, Zappos, and Siemens. These companies don't just have better technology — they have transformed the way they do business so that human resources can be augmented with machine powers" (N. R. Sanders, J. D. Wood, 2020).

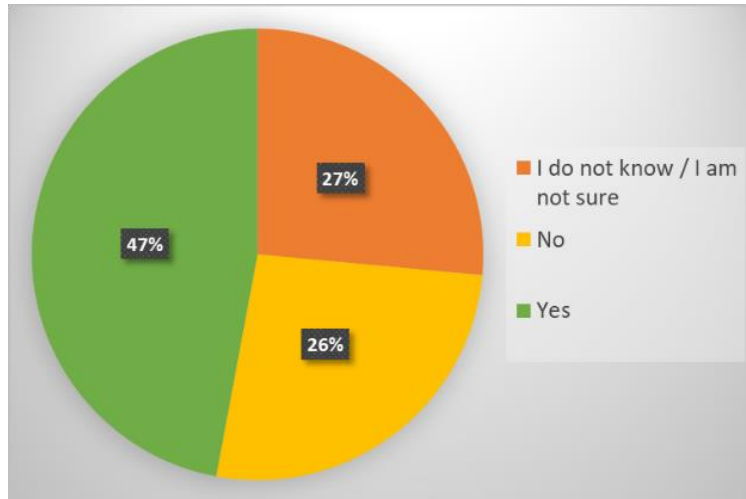


Figure 5: Does your organization use AI human-centric technologies?

Q7 - Figure 6 shows that the biggest percentage of our survey participants have answered that their organisation willing to use AI human-centric technologies (74%). On the other hand, we see a very small percentage (3%) answered “No”, and the 23% stated “I do not know / I am not sure”.

The business executives and employees seem optimistic about the impact of using AI human-centric technologies. However, by introducing AI human-centric technologies, into an organization is not enough by itself. Instead of this, augmenting technology with human-centered strategies and proper planning is a determining factor in the advantages that can be created. This plan should prioritize a change of the management and ensure that people have a key role in both defining and implementing it, in a way that brings maximum benefits to the organization (The Impossible Works Team, 2019).

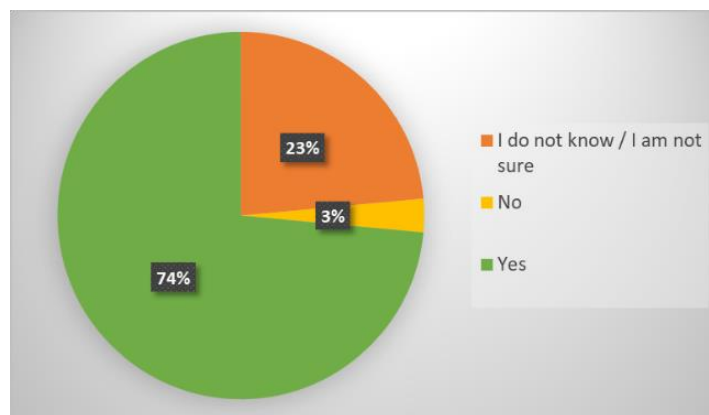


Figure 6: Is your organization willing to use AI human-centric technologies?

1.1.3 3rd Section of the Survey: TEACHING Offerings related questions

Q8 – Q14: Interest in using the TEACHING offerings: The survey participants’ willing to use the TEACHING offerings were assessed via a ten-point Net Promoter Score scale with 1 = “Not at all likely” and 10 = “Highly likely”. It is revealed that is highly likely to use AIaaS (6.88/10), the HPC2I (6.71/10) as well as the Hardware Boards (6.65/10). Furthermore, the respondents expressed mainly moderate possibility of using the Autonomous Driving Application (5.26/10), the METriCS measurement environment (6/10), the Dependability engineering (best practices and recommendations (5.97/10) and the TEACHING platform (5.68/10).

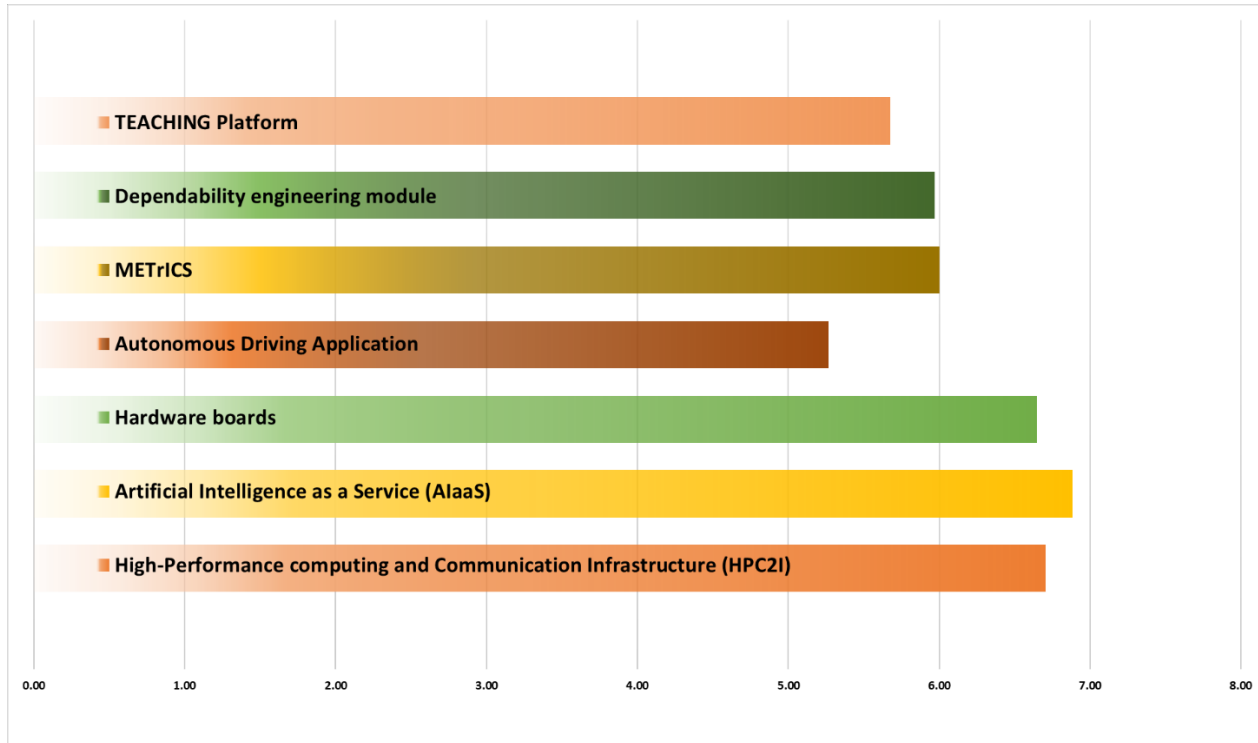


Figure 7: Assessment of the respondents’ interests in using the TEACHING offerings

Q15 - Key Pains: Participants were asked, which key pains could be addressed through the usage of the TEACHING platform.

TEACHING develops a human-aware CPSoS for autonomous safety-critical applications, based on a distributed, energy-efficient, and dependable AI, leveraging innovative edge computing platforms integrating specialized computing fabric for AI and in-silico support for intelligent cybersecurity solutions.

The goal of the TEACHING project is to design a computing platform and the associated software toolkit supporting the development and deployment of autonomous, adaptive, and dependable CPSoS applications, allowing them to exploit sustainable human feedback to drive, optimize and personalize the provisioning of their services.

Referring to the answers of the participants it's important to highlight that they have appreciate the ease of the development and integration of different AI (Figure 8) and human-centric components. Thus, the AI integrations and measurements within the use of the TEACHING platform, seems to be highly preferable. We can recognize the importance of the upgradability, privacy, security, and acceptance as critical aspects as well, that TEACHING platform could help their organization to establish them. Moreover, by using TEACHING platform, the organisations participants may be more interested about the AI based approaches, while this will further upgrade the organisation vision in suggesting future learning paths, in initiating with AI methods for solving engineering-technical problems and for improving critical decisions making.

To summarize, it can be seen that during the use of TEACHING platform, the participants aim to the clear understanding of the AI impact and the role of the human in the loop.

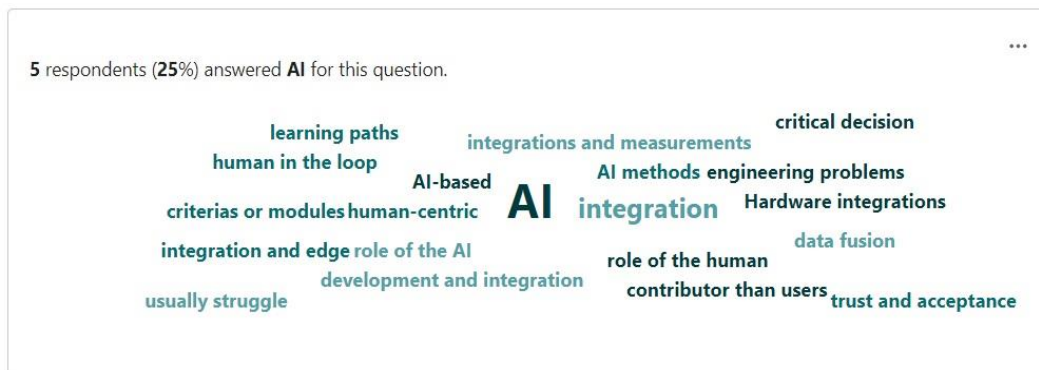


Figure 8: Key pains that could be addressed through the TEACHING Platform

Q16 - Key gains: Participants were asked, which key gains could win through the usage of the TEACHING platform.

With the above question we would like to define the gains that our respondents have stated for themselves or their customers. It's interesting that most of the participants thinks that TEACHING platform could elevate the personal level of each executive business of their organisation, as well as provide their customers the possibility of adopting AI services, growing awareness in autonomous systems and AI solutions, and improving their developments and deployment solutions.

Therefore, this could provide an ease of development, software components reusability, increase productivity and provide mature and tailored solutions to their customer needs and expectations.

However, it's important to mention that the respondents seem very confident for the integrated edge-based AI services and the exchange information with other users while their customers could gain within the use of the TEACHING platform. Also, "Safety critical tasks and SW behavior verification" is highlighted as

one of the compelling answers we received together with the “Experimentation platform for research and teaching”.

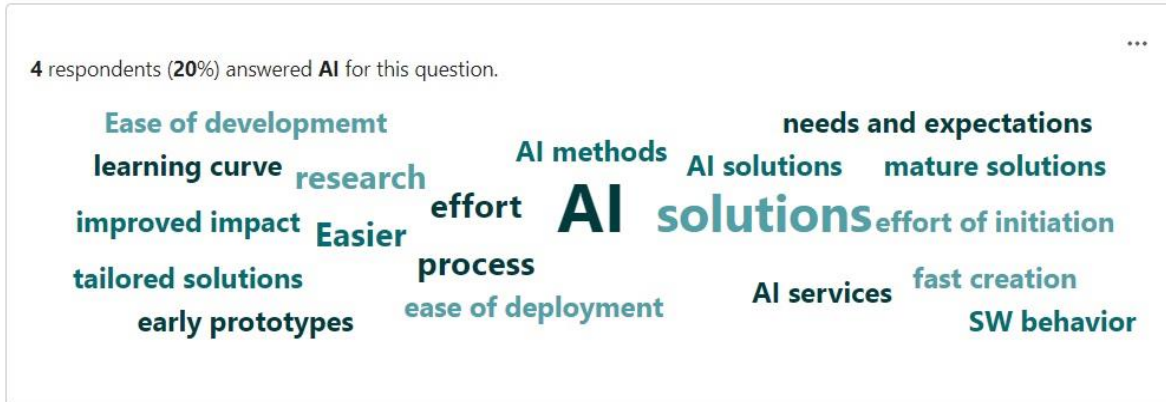


Figure 9: Key gains that could be win through the TEACHING Platform

Q17: We asked the survey participants to state if they were interested in knowing more about TEACHING platform and its component? And If yes, to specify the component (s).

In the Figure 10, we can distinguish the “AIaaS” and the “Hardware Boards” as the most likely components that probably the respondents wish to expand their knowledge about. Right after, the “HPC2I”, is the third most preferable component of TEACHING platform. Whereas most of the participants have chosen “No” as an answer, and few of them have voted for “Autonomous” and “Dependability” components for future learning key point.

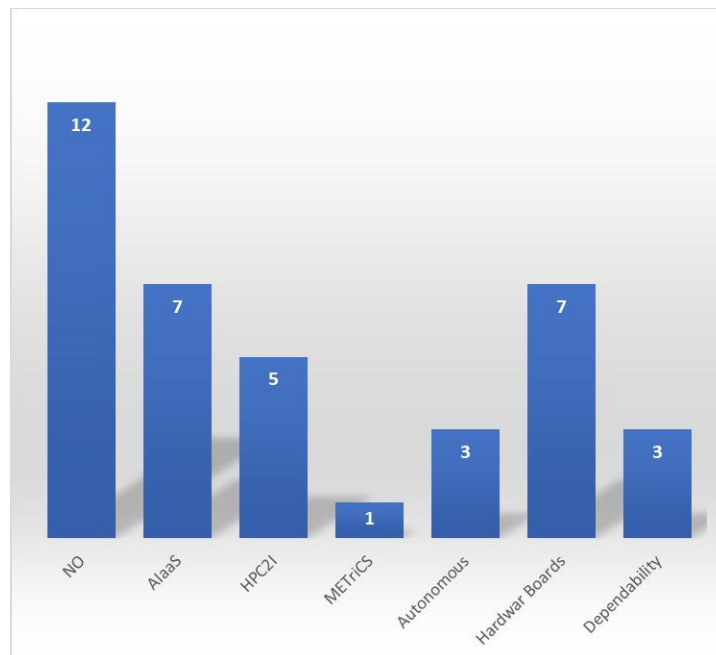


Figure 10: More interesting TEACHING module