



## Report on the first GRIFOn Meeting

D12.2

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<b>Distribution Level</b>	Public
<b>Responsible Partner</b>	10 – ELES
<b>Checked by WP leader Stephan Gross</b>	Date: 31.03.2022
<b>Verified by the appointed Reviewers Vassi Kujala (22/NordPool)</b>	Date: 30.03.2022
<b>Approved by Project Coordinator</b>	Date: 31.03.2022

<b>Dissemination Level</b>		
<b>PU</b>	Public	x
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	
<b>CI</b>	Classified, as referred to in Commission Decision 2001/844/EC	



**This project has received funding from the European Union's Horizon 2020  
research and innovation programme under grant agreement No 957739**



## Issue Record

<b>Planned delivery date</b>	31.03.2022
<b>Actual date of delivery</b>	01.04.2022
<b>Status and version</b>	V1.0

<b>Version</b>	<b>Date</b>	<b>Author(s)</b>	<b>Notes</b>
0.2	18.02.2022	Nadja Novak	Initial version
0.9	24.02.2022	Stephan Gross	Extended current content
1.0	31.03.2022	Nadja Novak & Stephan Gross	Integrated feedback from reviewer





## About OneNet

OneNet will provide a seamless integration of all the actors in the electricity network across Europe to create the conditions for a synergistic operation that optimizes the overall energy system while creating an open and fair market structure.

The project OneNet (One Network for Europe) is funded through the EU's eighth Framework Programme Horizon 2020. It is titled "TSO – DSO Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation" and responds to the call "Building a low-carbon, climate resilient future (LC)".

While the electrical grid is moving from being a fully centralized to a highly decentralized system, grid operators have to adapt to this changing environment and adjust their current business model to accommodate faster reactions and adaptive flexibility. This is an unprecedented challenge requiring an unprecedented solution. For this reason, the two major associations of grid operators in Europe, ENTSO-E and EDSO, have activated their members to put together a unique consortium.

OneNet will see the participation of a consortium of over 70 partners. Key partners in the consortium include: already mentioned ENTSO-E and EDSO, Elering, E-REDES, RWTH Aachen University, University of Comillas, VITO, European Dynamics, Ubitech, Engineering, and the EU's Florence School of Regulation (Energy).

The key elements of the project are:

1. Definition of a common market design for Europe: this means standardized products and key parameters for grid services which aim at the coordination of all actors, from grid operators to customers;
2. Definition of a Common IT Architecture and Common IT Interfaces: this means not trying to create a single IT platform for all the products but enabling an open architecture of interactions among several platforms so that anybody can join any market across Europe; and
3. Large-scale demonstrators to implement and showcase the scalable solutions developed throughout the project. These demonstrators are organized in four clusters coming to include countries in every region of Europe and testing innovative use cases never validated before.



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## List of Abbreviations and Acronyms

Acronym	Meaning
DSO	Distribution System Operator
GRIFOn	Grid Forum
ICT	Information and communications technology
IoT	Internet of things
IT	Information technology
TSO	Transmission System Operator
WP	Work package



## Executive Summary

Deliverable 12.2 is the report on the first GRIFOn workshop which took place virtually on 5<sup>th</sup> November 2021 from 10.00 to 11.30 via the Zoom conference system. 231 people registered for the workshop and 191 of them attended the event. Among them were representatives of TSOs and DSOs, regulators, aggregators, ICT & IoT companies, market operators, generators, energy communities and consumer organizations.

GRIFOn is an innovative approach in generating European-wide consensus about OneNet proposed solutions by integrating external stakeholders in the development key solutions. GRIFOn is implemented via workshops on specific project related topics. This report summarizes the objectives of the first workshop, including activities performed before the workshop, the course of the workshop and the key findings.

Additionally, the report provides a first outlook for the upcoming GRIFOn activities.

# 1 Introduction

The Grid Forum (GRIFOn) is an initiative launched by OneNet to promote and facilitate the creation of a community of stakeholders interested to collaborate and actively tackle the most pressing issues regarding the future European electricity markets. It will leverage different mechanisms of inclusion tailored to each stakeholder group to ensure their engagement over the lifetime of the project and beyond. GRIFOn will create a unique European-wide consensus and acceptance of OneNet proposed concepts and solutions.

GRIFOn has three main objectives:

1. Co-determination OneNet's project results through participation of all relevant stakeholders
2. Europe-wide knowledge sharing on how to shape an integrated European energy market
3. Consolidation of a common vision of the European energy markets and systems by building consensus of OneNet proposed solutions among project- and non-project parties

In the context of the OneNet project, GRIFOn's primary outcome will be two living documents that will be published as whitepapers at the end of the project. The first document titles **Interoperability Strategy for OneNet** the second one **Market design for OneNet** both documents will summarize some of the key results of the OneNet project.

1. **Interoperability Strategy for OneNet:** An essential aspect of an integrated European electricity system that considers the regional differences of the Member States is interoperability between its stakeholders and their systems. This living document will outline the path towards an interoperable federalized European electricity market following the system of system approach.
2. **Market design for OneNet:** GRIFOn will foster the development from a fragmented electricity market landscape towards an integrated pan-European one. This living document will provide a comprehensive overview of the current situation and point out the next steps for a unified European electricity market design

To collect the necessary feedback for GRIFOn's goals, the OneNet consortium draw the conclusion that interactive/engaging workshop formats are the most promising format for knowledge exchange between the project consortium and external stakeholders. Alternative ways of knowledge exchange, like surveys and open consultations may be used to support the workshop format. The OneNet project welcomes all stakeholders to create a European consensus on how to operate the electrical system as one single system based on a combination of existing and new concepts and solutions. GRIFOn may especially address and encourage TSOs & DSOs, regulators, aggregators, ICT & IoT companies, market operators, energy suppliers, energy communities and consumer organisations to engage with GRIFOn.

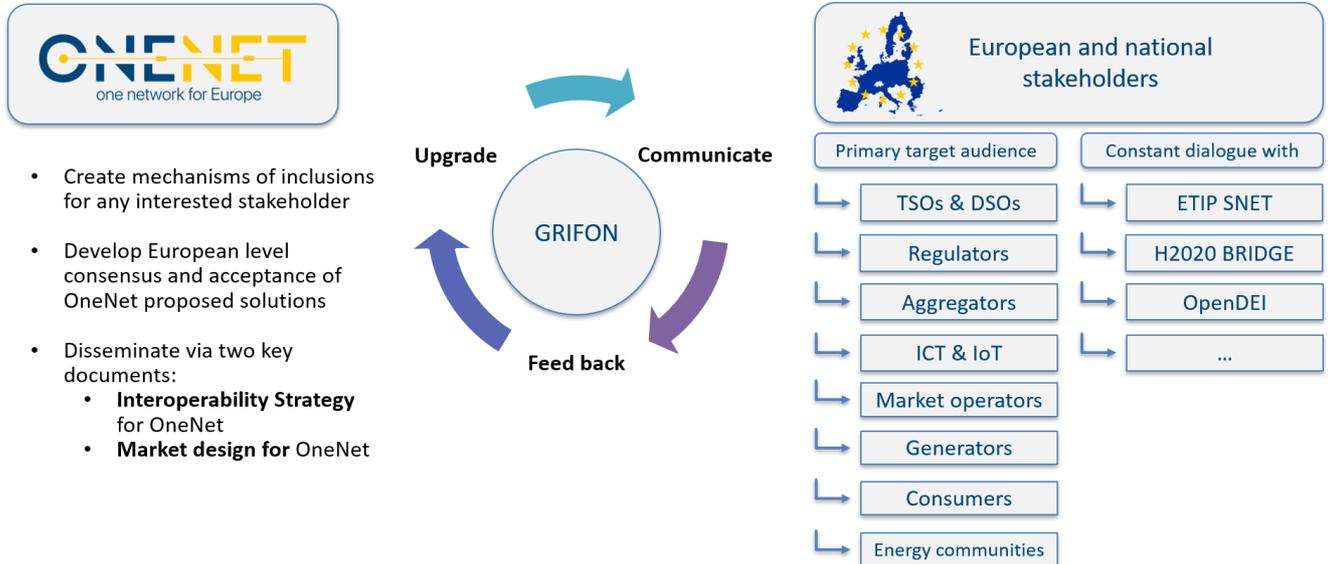


Figure 1-1 GRIFOn circle

GRIFOn enables OneNet to engage in a continues dialog with external stakeholders by allocating dedicated resources on this task. But it is still a challenging task to implement a constant communication flow between a large group of stakeholders. OneNet tackles this challenge with the support of the full project consortium. To communicate the GRIFOn idea, OneNet created Figure 1-1 that visualized the continues GRIFOn circle. GRIFOn provides us with a communication forum which leads to feedback on OneNet’s working topics, which allows us to upgrade our project results if necessary. The following of this report will describe our approach to implement GRIFOn with focus on our first GRIFOn workshop in November 2021.

This report consists of five chapters. Chapter one provides the key information on GRIFOn. Chapter two introduces our approach to implement the first GRIFOn workshop and presents background information on defining topics, stakeholders and designing the workshop. Chapter three reports on the first GRIFOn workshop. Chapter four summarizes our plans for the next GRIFOn activity on base of the learnings from the first workshop. Finally, chapter five concludes the current state of GRIFOn.

## 2 The GRIFOn approach

The OneNet consortium identified early that a clearly structured process is necessary to manage an activity like GRIFOn. Therefore, we defined a process that should help us implement a GRIFOn activity/workshop. This process follows a 6-step-approach.

- 1- **Identify topic:** Identify concrete OneNet related outcomes/deliverables that can benefit from external feedback (what, by when is feedback required)
- 2- **Identify stakeholders:** Identify the type of stakeholder and the individual stakeholders/stakeholder associations from whom feedback can be valuable
- 3- **Preliminary planning:** Decide on the form in which this feedback is ideally received (I.e. survey, workshop, track-changes review of deliverables, or a mixture of the these, ...)
- 4- **Detailed planning:** Define OneNet responsible partner and organize stakeholder engagement action in cooperation with GRIFOn lead
- 5- **Implementation and promotion:** Carry out stakeholder engagement action
- 6- **Feedback:** Feed the outcome of the stakeholder engagement action into the relevant living document

The following subsections describe how we followed this process to implement the first GRIFOn workshop in some more details.

### 2.1 Step 1: Identify topic

The OneNet project can be very roughly separated in three phases that largely overlap and interchange. These phases are:

- developing new flexibility products, services and associated market setup
- development and implementing of the OneNet IT system and the demonstration in the national demonstrations
- gathering data and evaluation of the project outcome.

In the first year of OneNet, the project consortium worked especially on the first two bullet points, which are heavily related to the work performed under WP2&3 and WP5&6. Derived from these two pairs of work packages, WP12 quickly concluded that GRIFOn should cope with two separated topics at the beginning for each pair one. The title for these two working topics were defined as “A harmonised European IT architecture for market and network operation” related to WP5&6 and “Services, products, and market design for a harmonised European electricity market” related to WP2 and 3. Both these topics build the fundament for the further work of the OneNet project.

## 2.2 Step 2: Identify stakeholders

During the dedicated GRIFOn Stakeholder Task Force meetings project partners discussed from which stakeholder groups the feedback on OneNet's activities/proposals/findings is needed. Project partners identified seven relevant stakeholder groups:

- Transmission and Distribution System Operators;
- Regulators;
- Aggregators;
- Market Operators;
- Industrial and Residential Consumers Organizations;
- Energy producers Associations;
- ICT / IoT providers / platforms.

Each stakeholder group was further segmented and a detailed list of individual stakeholders within each relevant stakeholder group was made. The list was the basis on which GRIFOn Task Force determined from which stakeholders' feedback at the first workshop is wanted.

## 2.3 Step 3 and 4: Planning the first GRIFOn event

During the dedicated GRIFOn Task Force meetings project partners discussed which stakeholders should be addressed for feedback on the two defined working topics. During the discussion it was agreed that the most urgent stakeholder feedback is needed for tasks 2.2 – “Definition of standard products in the TSO-DSO-consumer value chain” and task 3.1 – Framework for coordination models and market set-ups. During those meetings an agreement was also reached that the short presentation of the OneNet's goals and objectives as well as the idea and goals of GRIFOn are needed.

Project partners decided that the workshop should be conducted as follows:

- Plenary session with the general presentation of the OneNet project and GRIFOn;
- Breakout sessions with the presentation of the specific topic, its open issues and challenges (A harmonized European IT architecture for market and network operation and Services, products, and market design for a harmonized European electricity market), pools and discussion with participants;
- Conclusion with the presentation of the summaries from the breakout session.

As project partners wanted workshop participants to be informed in advance about the topics that will be discussed during the workshop, they prepared background materials for both sessions and encouraged participants to submit their questions in advance via on-line forms .

## 2.4 Step 5: Implementation and promotion

The project partners wanted to disseminate information about the planned workshop to a wide circle of stakeholders and to attract them to participate. Therefore, they prepared a dedicated page on the OneNet project website<sup>1</sup>, where agenda and background materials were available to download. News about the workshop was published on OneNet's web page and social media channels. Also, all project partners were asked to share information about the workshop on their on-line communication channels and among their connections from the pre-defined stakeholder groups.

## 2.5 Feedback

The last step of the GRIFOn event circle is to collect the feedback received during the GRIFOn event and to utilize it for further developments of the OneNet project results. The discussions and questions raised by the external stakeholders during the GRIFOn event provide valuable insights about controversial topics in the further development of the OneNet project. The results of the discussion find their way directly back into the OneNet deliverables. WP12 still looks for the best way to structure this process.

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<sup>1</sup> <https://onenet-project.eu/the-grid-forum-grifon-is-shaping-european-electricity-markets/>



### 3 The first GRIFOn workshop

The first GRIFOn event took place on November 5 in the form of a workshop. The workshop was organized virtually using the Zoom video conference system. As organizers decided to emphasise two topics that are addressing different stakeholders, the decision was made to have a short plenary session and afterwards two separated breakout sessions. During the breakout sessions, Zoom polls were used for getting feedback from the public on predefined questions. At the end, all participants reunited, and the key findings of each breakout sessions were presented. The agenda of the workshop can be seen in Table 3-1.

*Table 3-1 Agenda of the first GRIFOn workshop*

Start time	Stop time	Timeframe	Comment	Speaker
10:00	10:10	00:10	Welcome and Introduction of OneNet and GRIFOn	Prof. Monti
			Breakout sessions 1. A harmonised European IT architecture for market and network operation 2. Services, products, and market design for a harmonised European electricity market	
10:10	11:10	01:00		
11:10	11:25	00:15	Summary from the breakout sessions	Moderators
11:25	11:30	00:05	Closing words	Prof. Monti

#### 3.1 Plenary Session

The aim of the plenary session was to shortly present the OneNet project's vision and demonstrations that will test the developed new market concepts in real life. During this first agenda point, the project coordinator Professor Antonello Monti presented OneNet's:

- vision and three thematic pillars,
- demonstrations that will test new market concepts in real time,
- approach to support participation in flexibility markets,
- contribution on roles and interactions for the future electricity market,
- view about future and the idea behind the Grid Forum (GRIFOn).

After the short introductory presentation, the participants left the plenary session room and joined one of the two breakout sessions. At the end of the breakout sessions the participants rejoined the plenary session where the moderators of the breakout sessions presented the key findings of each breakout session.

## 3.2 Breakout Sessions

During the first GRIFOn event, we had two breakout sessions with two different thematic focuses: first: Services, products, and market design for a harmonised European electricity market and second: A harmonised European IT architecture for market and network operation. We will describe the proceeding of both breakout sessions in the next two subsections.

### 3.2.1 Services, products, and market design for a harmonised European electricity market

At the beginning of this breakout session, representative of the Ubitech Energy introduced the breakout session and presented its topics and objectives. After the introduction, three presentations followed:

- Frameworks for services, products and market frameworks (presented by VITO NV);
- Best practices and challenges in market design (presented by Comillas University);
- Challenges in market integration (presented by ENTSO-E).

The four presentations were followed by the panel discussion, where the following topics were discussed:

- Options to solve local congestions in both transmission and distribution grids
- Product design approaches
- Mechanisms facilitating the engagement of Flexibility Service Providers
- System services procurement approaches
- Co-optimization of energy and reserves

For the interaction with the public, platform Zoom polls were planned to be used. Unfortunately, due to technical reasons, Zoom polls couldn't be used. Therefore, the moderator asked participants to write their comments on each of the questions in the chat. He also encouraged them to write additional questions or leave their e-mail if they want to have more in-depth discussion with the presenters. Project partners identified a few important questions on which they wanted to get feedback from the participants.

1. There are multiple options to solve local congestions in both transmission and distribution grids. What is, according to you, the preferred solution in case regulation allows them? (single answer allowed)
  - Grid reinforcement
  - Change in grid topology
  - Dynamic connection agreements
  - Dynamic tariffs
  - The use of flexibility products
  - Other

2. When defining flexibility products, it is possible to design products that serve multiple TSOs, multiple DSOs or a combination of TSOs and DSOs. Furthermore, it is also possible to design flexibility products that could be used to deliver more than one system service (e.g. a flexibility product that can be used to facilitate frequency and congestion management). Two potential approaches has been identified to deliver these products:

A super product approach – this represents a more restrictive product definition as this one product will need to fulfil the requirements of more than one system service.

A flexibility supermarket – this represents a less restrictive product definition as this one product will need to fulfil the requirements of at least one system service.

What are the key elements when deciding on opting for super products or a supermarket approach? (multiple answers allowed)

- Complexity
  - Liquidity concerns
  - Information exchange requirements
  - Others
3. To reflect potential technical constraints, system operators include a minimum amount of power (or change in power) Flexibility Service Providers need to include in their bid when defining flexibility products. This minimum size of the bid limits the direct participation in the market of some consumers connected to the low voltage network. What are the mechanisms SOs should use to facilitate engagement with flexibility providers to determine that minimum size? (multiple answers allowed)
- Customer engagement strategies
  - Engagement to design flexibility products
  - Develop and deploy algorithms or data analytical methods to facilitate interactions
  - Facilitate the creation of commercial aggregators
  - Facilitate the creation of energy communities and other local markets
  - Others
4. System services can be procured with a centralized or decentralized approach. In a centralized approach TSOs and DSOs procure from FSPs the products for system services in a single (e.g. country-wide) common market. In a decentralised approach, multiple markets exist at local level and TSOs and DSOs may be single buyers in different markets. However, bids can be forwarded among the different markets. What services better fit with the common TSO-DSO market model?
- Voltage control
  - Network Congestion management

- Balancing
  - Frequency control
  - Rotor angle stability
  - System restoration
  - System adequacy
  - Islanded operation
  - Other
5. What services better fit with the local market model? (multiple answers allowed)
- Voltage control
  - Network Congestion management
  - Balancing
  - Frequency control
  - Rotor angle stability
  - System restoration
  - System adequacy
  - Islanded operation
  - Other
6. Co-optimization refers to simultaneous optimization of two or more different, yet related, resources. Currently procurements of reserves is separated from energy markets in Europe. Co-optimized markets allow for the generation capacity to be allocated for provision of energy or reserves enabling most valuable use of the capacity and potentially leading to lower costs. Co-optimization evaluates the lost-opportunity costs and trade-offs when allocating products (energy, reserve). What are the pros or cons of implementing co-optimization of energy and reserves in the day-ahead timeframe as part of the future market design?
- It will lead to further complexity and non-transparent pricing.
  - Complexity could be a barrier to entry for new players.
  - Sequential markets are more attractive and realistic for market parties.
  - It will avoid in-efficiencies and increase social welfare.
  - Other.

Comments received from the participants in the chat:

*“Key to distinguish arbitrage from gaming since ENTIRELY different things and in any event not as such any specific application or heightened risk of gaming that would have to be present in market based local flexi markets.”*

*"It is probably up to 'market powers' and 'liquidity' to see whether we are dealing with arbitrage or gaming"*

*"Methodological approaches should be developed to decide among the set of alternatives in an optimal way."*

*"I would say that 'change in grid topology' (TSO-DSO coordination) is always a first (and better) option prior of reinforcements."*

*"I agree with the thought that all options are useful and it must depend on a cost benefit analysis. Having all options available (e.g., having flexibility products defined and ideally operating) is important to conduct this CBA properly"*

*"I'd say flexibility - this allows the assets to be profitable, thinking for example on storage, where the more utilization and revenue streams, the better for the economic case."*

### 3.2.2 A harmonised European IT architecture for market and network operation

At the beginning of this breakout session, representative of the Enedis introduced the topic and presented the objectives. After the introduction, the representatives of Engineering and Ubitech presented the key elements of the OneNet concept and methodology as well as the solution for cross-border data exchange and regional cooperation.

Presentations were followed by the panel discussion, where panelists debated the following questions:

- How was OneNet architecture designed to meet different requirements?
- Is the final result aligned or has the potential to be aligned with the foreseen works in all demonstrations?
- What is the main innovation behind the OneNet framework considering leveraging on its architecture?
- What are the key features of the OneNet framework to enable interoperability between countries and between systems?
- What kind of cyber security mechanisms are included into OneNet mechanism?
- Is there foreseen some integration with other platforms concerning data privacy where a customer gives permission to use their data?

Ubitech's representative said there was a lot of work done between technical and demonstration partners. The result of this work on demo level was the development of business and system use-cases and afterwards the definition of regional use-cases. Engineering's representative added that on the one hand they had to meet the needs of each participating country, and on the other hand the needs of each regional cluster. In the process of

designing the architecture they collected requirements and feedback from cluster participants. One important request from the majority of countries was providing data privacy and this request was taken into account in the process of planning the IT architecture. European Dynamics stressed it is very important to use initiatives that provide full interoperability, distinct layer in the reference architecture (e.g. Bridge,...), standardization and trust in the virtual data space, as these components are all extremely important for the OneNet. Representative of Engineering said that the key feature is the decentralized approach that they are using in OneNet. Because from the IT perspective their task is to facilitate integration. Therefore, they try to create the OneNet connector that is pluggable and easily integrated inside existing environments and which allows communication between OneNet participants. All those features integrated inside the OneNet connector, should facilitate this integration and cooperation between different arches. The standardized interfaces and data models should play a critical role in the OneNet.

Project partners stressed that the cyber security assessment was made prior to the development of OneNet system. They assessed cyber security requirements, regulatory frameworks, best practices in Europe and globally in the power sector and especially in the field of smart grids. Also, the identification of the security landscape in the energy sector was conducted. They stressed that the decentralized approach they are designing for OneNet allows to maintain the local management of the data. They will also provide the data arches policy management directly in the OneNet connector. This will enable each participant to manage the arches on their own data locally which is very important from the data management and data ownership point of view.

Any actor can be a OneNet participant - so a customer for example could integrate their own data and therefore becoming a data provider and of course it could define its data arches policy and its data privacy rules. The OneNet's idea is to define guidelines and rules for managing the data arches policy and not integrating already existing solutions. OneNet is creating the virtual data space where participants are not only business actors but also service providers – they will be able to provide to the data space the specific set of data or services by following specific rules.

## 4 GRIFOn next step

After the first workshop, the GRIFOn task force evaluated the organization and implementation of the event. The organizers were pleased with the number of participants that attended the event and a little less pleased with the involvement of participants and the interactivity of the discussion. Therefore, the task force started to explore different options on how to encourage two-way communication with the stakeholders and to make webinars more interactive. As the goal is to get feedback from the stakeholders and actively involve them in the debate on open issues that are arising during the implementation of the project.

After a brainstorming session involving all OneNet partners, which are engaged in the implementation of GRIFOn, the involved parties came up with a series of potential formats (World Café, Florence Forum Format, public consultation, BRIDGE Model, ETIP SNET Model, etc.) for a next GRIFOn event. After further investigation the different formats, the GRIFOn task force concluded that the next GRIFOn workshop should be organized like a World Café. A World Café should allow us to engage in productive discussions with the participating stakeholders even if the next workshop reaches similar participation numbers like the first workshop (~200).

The moderators of the first GRIFOn workshop encountered a series of technical problems during the implementation of the first GRIFOn workshop, even so that the moderators participated in rehearsal appointments and internal trainings before the event. The GRIFOn task force concluded that we need to bring in further technical moderators that have the necessary experience in hosting large scale online events. Fraunhofer reached out internally to integrate further communication experts from Fraunhofer, which are specialist in hosting large scale virtual trainings, to support the next GRIFOn event. Together with the support of Fraunhofer's communication expert, the GRIFOn taskforce is working on planning the next GRIFOn event. Different virtual conference systems are in discussion like Zoom, MS Teams and Wonder.me that should be combined with further web applications like Miro, Slido, Mentimeter and others. The concrete procedure of the event is still in discussion but the GRIFOn taskforce is excited in taking the next step in implementing GRIFOn. Concretely, the GRIFOn task force reinforced with the Fraunhofer communication experts are working on the outline and content of the second GRIFOn workshop foreseen for the end of April.

## 5 Conclusions

GRIFOn is a key concept of the OneNet project. OneNet ambitions project goals require a European wide consensus about our proposed solutions. To strengthen the consensus about OneNet proposed solutions, GRIFOn will engage with as many external stakeholders as possible. The feedback from these stakeholders will find its way back into the proposed solutions. By allowing each stakeholder to provide their opinion, feedback, and expertise on OneNet's solutions, OneNet will reach an unforeseen level of European consensus about our project results.

GRIFOn is an ambitious endeavor. With our first GRIFOn activity, OneNet showed that the project can engage with a large number of external stakeholders. Taking the learnings from the first workshop, OneNet will further develop the GRIFOn idea and in particular focus on improving the direct exchange with external stakeholders.

The project consortium is convinced of the GRIFOn idea and believes that it is an important building block for the OneNet project.



*This paper reflects only the author's view and the Innovation and Networks Executive Agency (INEA) is not responsible for any use that may be made of the information it contains.*

