Next Steps on the SML

MC1832 Mandate – v3, 2024.01.22

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1. Background
	1. Context and motivation

The Service Metadata Locator (SML) is the central service for registration of all end users with the address to the Service Metadata Publisher (SMP) where the detailed information about the end users capabilities to receive business documents through the Peppol Network and the technical address of their access point can be found. It is a core service and constitutes critical infrastructure for Peppol, having the Service Providers depending on its smooth and uninterrupted function.

The SML service is operated by the European Commission (EC) and is available for use by the Peppol Network free of charge. As such, the service is delivered without the kind of SLA typically offered by the IT industry. An incident occurred recently, where a technical malfunction on EC side resulted in failure to register and unregister participants. Even though operations continued smoothly for participants already registered, this failure caused disruption to the Peppol Network perceived as significant by several service providers.

With this incident, the known risks OpenPeppol faces with respect to the SML service delivered by the EC surfaced again, and it has become a matter of priority to mitigate them.

In the present mandate, the OpenPeppol Managing Committee (MC) outlines the objectives, scope and expected results of a Critical Infrastructure Working Group (CI-WG) that will be established under the eDelivery Community (eDEC) as soon as possible with the participation of OpenPeppol member representatives and support from the Operating Office (OO).

By approving this document, the Managing Committee decides to formally establish the OpenPeppol Critical Infrastructure Working Group and set its terms of reference.

* 1. The basic facts

The following facts are necessary for understanding the current situation and the associated risks, as well as the means to mitigate them:

1. The SML is hosted by the European Commission (EC) and is provided for free to OpenPeppol and its members on the basis of a Memorandum of Understanding.
2. The EC is responsible for technical support and maintenance of the SML, but it is not under a commercial strength SLA. The EC currently considers the SML a “bootstrapping” service, intended for communities that are to be supported until they mature sufficiently to operate independently in the market.
3. The SML service of the EC has capacity limitations that are still far from the current size of the Peppol Network (under 1 million receivers) but when Belgium uploaded to the SML all entries in the national business register there were 2 million additional entries under the Peppol SML domain. With the growth we now see and expect, numbers may rise fast, and capacity may be a problem in the medium term 2-3 years)
4. The EC has already pointed out to OpenPeppol that the policy priorities might change and that the SML service may not be available indefinitely. OpenPeppol is by far the largest community hosted by the EC (there are others, but with far fewer entries) and there are concerns that Peppol may soon become too big for the current service conditions. In short, the EC expects, under their current policy, that OpenPeppol will some day in the not-too-distant future transfer its operations elsewhere.
5. In its current form, the SML remains a single point of failure by design. In principle, a federated architecture of several SML instances would be more robust and resilient, but this raises some technical and governance issues. Still, a federated SML architecture would also meet the requirements of some countries, particularly in APAC but also in some European countries, to have access to a service that is closer to home and perhaps owned by each country, thereby exercising sovereignty rights over the data and services concerning the end users based in their jurisdictions.
6. The SML is not the only candidate critical infrastructure service currently on the Peppol ecosystem. The Peppol Directory has come to be viewed as an essential pre-discovery service and many service providers as well as end users rely on automated access to it as part of their process automation. But this means that, on current assumptions, Peppol would have to scale two systems up to multi-million capacity. There is an apparent need for rationalisation and optimisation of the dynamic discovery architecture to meet this combination of emerging needs.
	1. Assessment of the situation

The following conclusions can be derived from the history of the SML and the future prospects, within the context of the surrounding environment and given the positions of relevant stakeholders.

1. The support that OpenPeppol has received from the EC by hosting the SML has been valuable both financially, since OpenPeppol did not have to incur costs for critical infrastructure. At the same time, the EC hosting of the SML has given a lot of credibility to Peppol inside Europe but also in most, but not all, cases outside Europe.
2. As Peppol grows and matures, there is a growing consensus among members that critical infrastructure such as the SML must be robust, resilient and scalable in line with acceptable high standards demanded by and from the IT industry. Given the facts outlined above, the current EC service is not a sustainable path for OpenPeppol.
3. There are several options that can be explored and paths that can coexist in parallel, in order to address the challenges:
	1. Discus with the European Commission the possibility to extend the scope of their SML service in terms of both capacity and resilience. There are good grounds for that request to be made by EU Member States that intend to increase usage of Peppol.
	2. Explore the architectural possibilities and the practical implications of creating a federated SML environment, where some countries can have their own instance for their own end users and OpenPeppol could operate the service for the other jurisdictions, either inside or outside an EC offering.
	3. Prepare for a total insourcing, if necessary, of the existing SML service, calculating the costs and identifying providers that can execute such an undertaking. This option must be present as a safeguard to ensure service continuity under the current SML architecture and features.
	4. Explore alternative architectures for dynamic discovery, considering the functions currently performed by the SML but also those performed by the Peppol Directory and attempt to optimise the critical infrastructure environment that the Peppol Network needs
4. The cost of moving the SML out of the EC is quite high and difficult to absorb under the current growth and revenue patterns. As the revenue grows with more members joining, so increases the needs for human resources and other expenses. Insourcing the SML under current conditions without a change in the revenue model would necessitate a cut in activity and less capacity to support operations and the needs of members – this is the main reason it has not been attempted so far.
5. Terms of Reference
	1. Objectives

The Critical Infrastructure Working Group shall aim to:

1. Mitigate the current risks with the SML service by exploring alternative options in line with the assessment made in the present mandate
2. Draw pathways towards a more robust, resilient and scalable SML and critical infrastructure more generally.
3. Assess the critical infrastructure needs of the Peppol Network and propose solutions that improve the dynamic discovery architecture.
	1. Scope

Work is expected to follow multiple streams such as, but not necessarily limited to, the following:

1. SML federation – architecture and proof of concept
2. Data and service sovereignty – subgroup led by, but not limited to, APAC countries.
3. Evolution of dynamic discovery architecture, based on needs for critical infrastructure
	1. Expected deliverables

Indicative deliverables are expected to be the following:

1. Initiation, within 2024, of a process to improve, or disengage from, the current service of the European Commission.
2. Feasibility study for the migration to a federated SML environment.
3. Report on the possible evolution of the Peppol dynamic discovery architecture and critical infrastructure
	1. Participation and Coordination

The Critical Infrastructure Working Group shall be open to members of all categories, based on interest. Members who take part in the actual work and contribute to deliverables are expected to ensure sufficient time availability for WG tasks.

The Stakeholder and Domain Communities can facilitate participation by appointing representatives to the WG, if they so desire.

The OO will provide technical, governance, market development and administrative support to the WG according to its needs and to the extent of its overall capacity. This will be a high priority activity for 2024.

The overall coordination of the Critical Infrastructure Working Group shall be performed by the OO Technical Lead, Klaus Vilstrup. Technical work streams will operate in coordination with eDEC. Specific work streams and activities may be led by PA or SP representatives, as decided within the WG.

1. Governance and Functions
2. Duration of the WG is set to 18 months. The MC can revise this timeline by a later decision.
3. The Critical Infrastructure Working Group shall respect the provisions of the present mandate and any future revisions thereof, as well as contribute to the implementation of any Managing Committee decisions that are relevant to its objectives and scope.
4. Subject to the provisions contained in the present mandate, the Critical Infrastructure Working Group shall use its own discretion in choosing the best way to fulfil its objectives.
5. The Critical Infrastructure Working Group can choose its own modus operandi, subject to the provisions contained in this mandate.
6. The Critical Infrastructure Working Group is expected to:
	1. Define its own procedures regarding chairing and conducting meetings
	2. Determine the duration, timing and frequency of meetings, agenda items and minutes
	3. Define its own requirements for producing and reviewing content, if applicable
	4. Use tools provided by OpenPeppol and supported by the Operating Office
7. The Operating Office is expected to provide, to the best of its ability and to the extent of its capacity and capabilities:
	1. Assistance in the facilitation of meetings, communications, and other related tasks
	2. Technical and governance level expert support to the proceeding of the Committee
	3. Accessibility to tools under its responsibility
8. MC183 Decision

The OpenPeppol Managing Committee decides to:

1. Establish the Critical Infrastructure Working Group, subject to the provisions of the present mandate.
2. Request that the Peppol Authority and Service Provider Communities to appoint representatives to the Critical Infrastructure Working Group, following the provisions of the present mandate.
3. Instruct the Operating Office to drive and support the execution of this decision.