

## **Annex 1: Questions about the interoperability for external stakeholders**

### **Interoperability basics**

1. What is the Interoperability for you?
2. How do you conceptualize an interoperable ecosystem?
  - a. A framework for sharing/exposing data in an interoperable manner
  - b. A framework for exposing our services to others and utilize interesting services provided by other systems
  - c. A framework which facilitates communication and interaction with other systems
3. What do you consider to be the primary role of the interoperability?
4. Do you feel a need for the interoperability in your organisation? What are your expectations?

### **The interoperability environment**

5. If you are facing interoperability issues, what kind of issues are there?  
E.g.: Hardware interoperability, data interoperability, service interoperability, live streams interoperability...?
6. If you are facing interoperability issues, how are you overcoming them?
7. Does your initiative provide a central "hub for interoperability" or are you providing companies a de-centralised solution? Is centralisation (a single solution installed and managed by a single organisation) a viable way in your domain?
8. Do actors in your domain use well-established standards/specifications or are they all using their own custom data model/API ?
9. Did you define a single reference datamodel or API? Are you accepting data/services expressed using different standards/specifications or are you forcing everyone to use a single one?
10. In case each company uses a different standard/specification, is there a process by which a company/actor notifies other actors in the initiative about changes in his data/service model or behaviour?

11. What is the process that a new actor must follow to contribute their data/services to your initiative?
12. When a new actor joins the initiative, can he define his own policy regarding data/service access? Are new data/services accessible to anyone in the initiative or is there a process to gain access to the resources contributed by the actor?

### **Data management performance**

13. In the case your organisation is interested to make some data available to external parties through some endpoints, how much is the volume of such data?
14. How frequently are such data changing/ being updating/ becoming outdated?

### **National Access Points**

15. Are you aware that an EU Regulation (EU 2017/1926) requires each EU transport authority, operator and infrastructure manager to allow access to transportation data, defined according to specific standards (e.g., NeTEx, SIRI), via a National Access Point?
16. What's the status of the National Access Point to multimodal transportation data in your country?
17. What are your priorities/biggest challenges regarding the Regulation?
18. Which datasets would you be open to share via the NAP? With which policies and conditions? (open data / pay per use / official request and signature of a contract / ... )
19. Are you already using the standards that the Regulation mandates? If not, have you already set up a project to work on this?

### **Data management performance and scalability requirement**

20. How do you describe the type of data your organisation mainly operate upon?
  - d. Real-time data: The data you are relying upon are frequently changing and you are interested only in most recent/up-to-date data.
  - e. Historical data: Your organisation is interested in accumulative dataset ranging from most recent data to data from X days/months/years ago.
  - f. Reference data: Your organisation is interested in data which are mainly sets of values or classification schemas that are referred to by systems, applications, data stores, processes etc. (such as code lists, set of valid values).

- g. Meta-data: Your organisation is interested in “data about data” in a structured and standard manner so it could discover, retrieve, process, analyse and utilise the desired information and knowledge using them.
21. In the context of the interoperability, do you consider your organisation more a service provider or service consumer?
22. In the case of service provision, how often may you introduce a new service? How much is the average duration of a service to be available and functioning?

### **Availability and reliability requirement**

23. Do you have any specific availability requirement/ expectation?
24. In the context of the interoperability with external systems, do the internal processes/operations of your system strictly depend on some operation delivered by other parties?

### **Overall IF performance/Response-time and speed of processing**

25. Do you have any time constraint for execution of a single operation?
26. Do you have any operations within a time-sensitive operation such as a transaction?

### **Overall IF performance/Network aspects**

27. How much is the volume of data that must be transferred in a single operation/transaction?
28. In the context of an interoperable ecosystem, how many operations do you think your organisation may perform daily with other systems?

### **Overall IF performance/ level of automation, e.g., for query formation, conversion etc.**

29. What is the level of expertise of the people who are expected to manage cooperation with other organisation?
30. What level of automation do you expect in invocation of different tasks of external system?