Joint meeting of IG Brokering and IG Data Fabric:
Brokering services

Stefano Nativi, Jay Pearlman
Brokering History
Interoperability Challenge

- Challenge in Accessing data from different sources
- Challenge in Identifying and citing data objects, and in publishing data
- Challenge in Executing applications on distributed infrastructures
- Challenge in Combining different data processing models

Credit: Data Fabric IG Envri+ use Case
Service Brokering Pattern

Traditional SOA
(NxM connections)

Advanced B-SOA
(N+M connections)
Scope

can be different can evolve autonomously

```
«Client» Resource Consumer
«Middleware» Brokering Framework
«Server» Resource Provider

+facilitated part
+facilitator

accesses 1..*
brokers 1..*

managedBy

+publisher
publishes
+to be shared 1..*

«Software» Federated System
«Software» Application

«Organization» Governance Committee

«Artifact» Resource
```
Virtualization of data supply systems

End/Intermediate User

Virtual Supply System
The Broker that (effectively) works in a heterogeneous environment containing multiple remote objects that interact synchronously or asynchronously typically demonstrates the ability to:

1. Finalize requests on behalf of its clients against a vast supply system – e.g. by transforming different interoperability protocols;
2. Support many clients at the same time in a dynamic way;
3. Access large, distributed, and heterogeneous supply systems in a dynamic way;
4. Is fully autonomous from its clients and accessed supply systems;
5. Is flexible and configurable (even at run-time);
6. Is extensible.
Service Brokering Benefits

- Keep the existing capacities as autonomous as possible by interconnecting and mediating standard and non-standard capacities.
- Supplement but not supplant systems mandates and governance arrangements.
- Assure a low entry barrier for both resource users and producers.
- Be flexible enough to accommodate existing and future information systems as well.
- Build incrementally on existing infrastructures (information systems) and incorporate heterogeneous resources by introducing distribution and mediation functionalities to interconnect heterogeneous resources.
- Specify interoperability arrangements focusing on the composability of inter-disciplinary concepts rather than just the technical interoperability of systems.

Credit: FP7 EuroGEOSS project
Possible collaborations
**PID Centric Data Management and Access**

**Diagram Description:**
- **End users, developers, and automated processes**
- **Deal with persistently identified, consistently structured digital objects**
- **Which are securely & redundantly managed & stored in the Digital Object Cloud**
- **Which is an overlay on existing or future information storage systems.**

**Interoperability/service Interfaces**

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**Additional Text:**

- **Identifier Service**
- **Repository**
- **Cloud**
PID Centric Data Management and Access

Users

End users, developers, and automated processes

Provider

Deal with persistently identified, consistently structured digital objects

Consumer

which are securely & redundantly managed & stored in the Digital Object Cloud

Storage Systems

which is an overlay on existing or future information storage systems

Provider

B

Consumer
Map/mediate different Digital Objects

End users, developers, and automated processes deal with persistently identified, consistently structured digital objects which are securely & redundantly managed & stored in the Digital Object Cloud, which is an overlay on existing or future information storage systems.

Consumer --- B --- Provider
Thank you for your Attention!