Deliverable D2.2:
Ontology-based techniques for data distribution and consistency management in a SWIM environment

What is the contribution of this deliverable to the overall goals of BEST?

ATM information packaged into semantic containers can be stored redundantly on different server nodes for increased availability. The metadata expressed using semantic technologies allows for the replication of information and the subsequent discovery and re-use in a distributed environment. A semantic container may also derive from other containers, combining the information contained in these containers. The semantic description of information allows for the updating of such combinations of containers in a distributed environment where different services produce and update the source information. The semantic description may also be beneficial for deciding where to allocate information in a distributed SWIM environment.

Current Status of the Deliverable

In progress.

What items does the deliverable contain?

When we talk about a "Deliverable" in BEST, we mean not only the formal document describing the work done, but also any associated technical artefacts such as software, models, ontologies, diagrams etc.

Item#	Brief Description	What it can be used for
Provided separately (i.e. not in the formal deliverable document)		
1	Metamodel in UML for the semantic container approach as an enterprise architect project	May serve as blueprint for implementing the semantic container approach
Provided in the formal deliverable document		
2	Definition of logical containers, i.e., logical units of ATM information with a semantic description of the container contents, information about the sources (in case of composite containers), and information about allocations.	To describe the information that service instances work with and provide. Can also be used to build an index of semantic containers to finding existing packages of information that fit a particular information need most closely.

3	Definition of physical containers, i.e., physical allocations of logical containers on specific server nodes, with different data sets	To actually store the packaged information in a distributed SWIM environment with multiple nodes.
4	Concept for incremental updates of semantic containers using data sets	To realize the update process in a way that keeps track of changes and also allows for derivation of data from alternative sources should the original sources become unavailable.
5	Consideration of semantic description of information for physical allocation	To implement a system that automatically allocates semantic containers at locations where the information is actually needed.

What details can I find in the deliverable document?

The deliverable primarily develops a detailed metamodel of the semantic container approach in UML format. The metamodel considers logical and physical aspects of data management. Besides the metamodel, the deliverable also investigates how semantic descriptions of ATM information can be used to determine optimal locations for data allocation.

How can I access parts of the deliverable that are not part of the formal document?

The metamodel is work in progress; the current version can be downloaded on eRoom[1].

[1] https://project.sintef.no/eRoomReq/Files/IKT3/SCONTI/0_8e30/Metamodel_SemanticContainerApproach.eap