Own your Own Data

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Lexikon tdi ODS

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Own your own Data

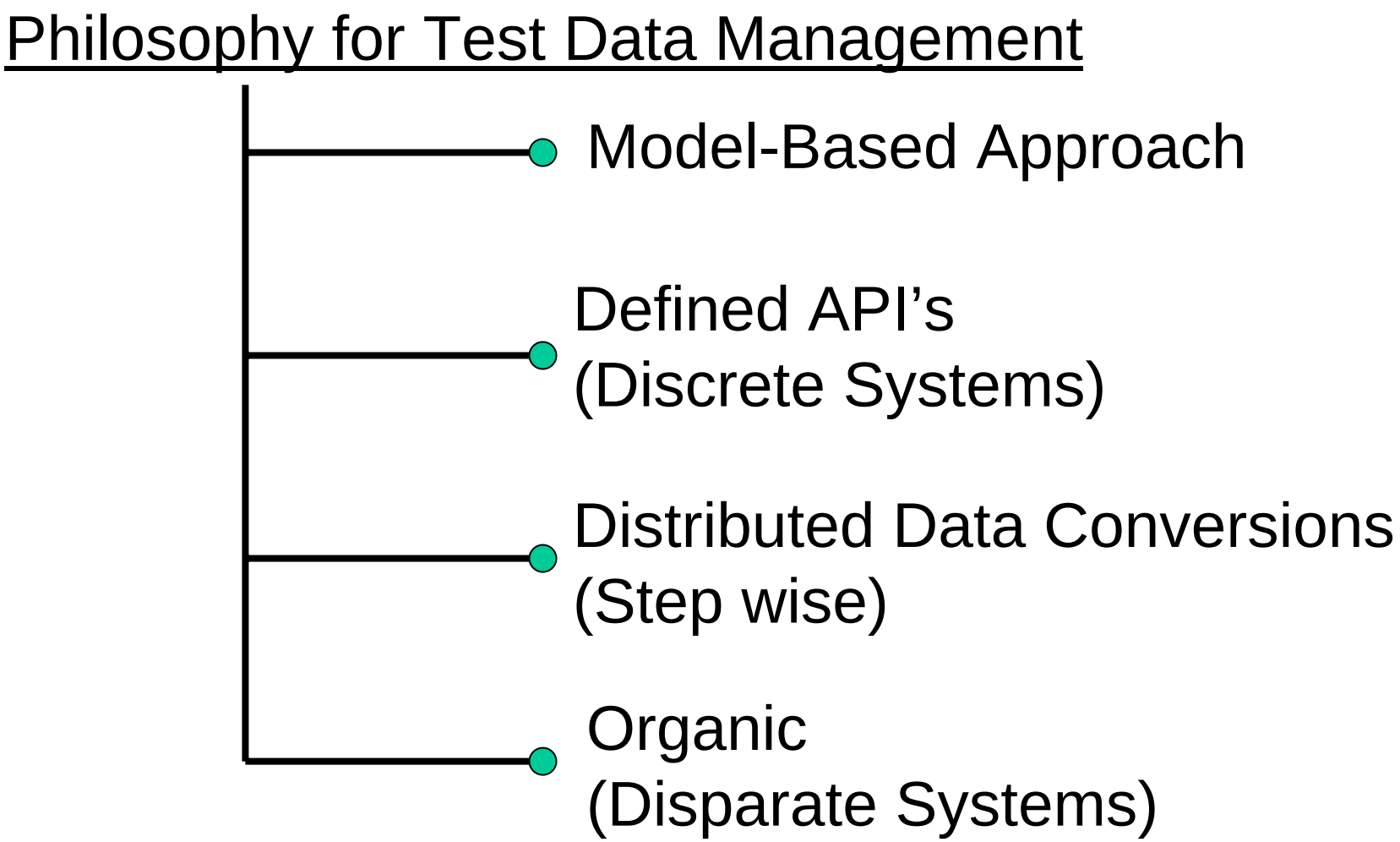
Objective:-

To provide the ability of Generators, Users and Managers of Technical Data to create an environment within which they can completely control their own data

Own your own Data

- Review.
- Process Overview.
- Model-based Approach to Technical Data Management.
- Lexikon Metadata Management.
- Implementation Framework.
- Summary.

Overview of Possible Approaches



Product Delivery Cycle

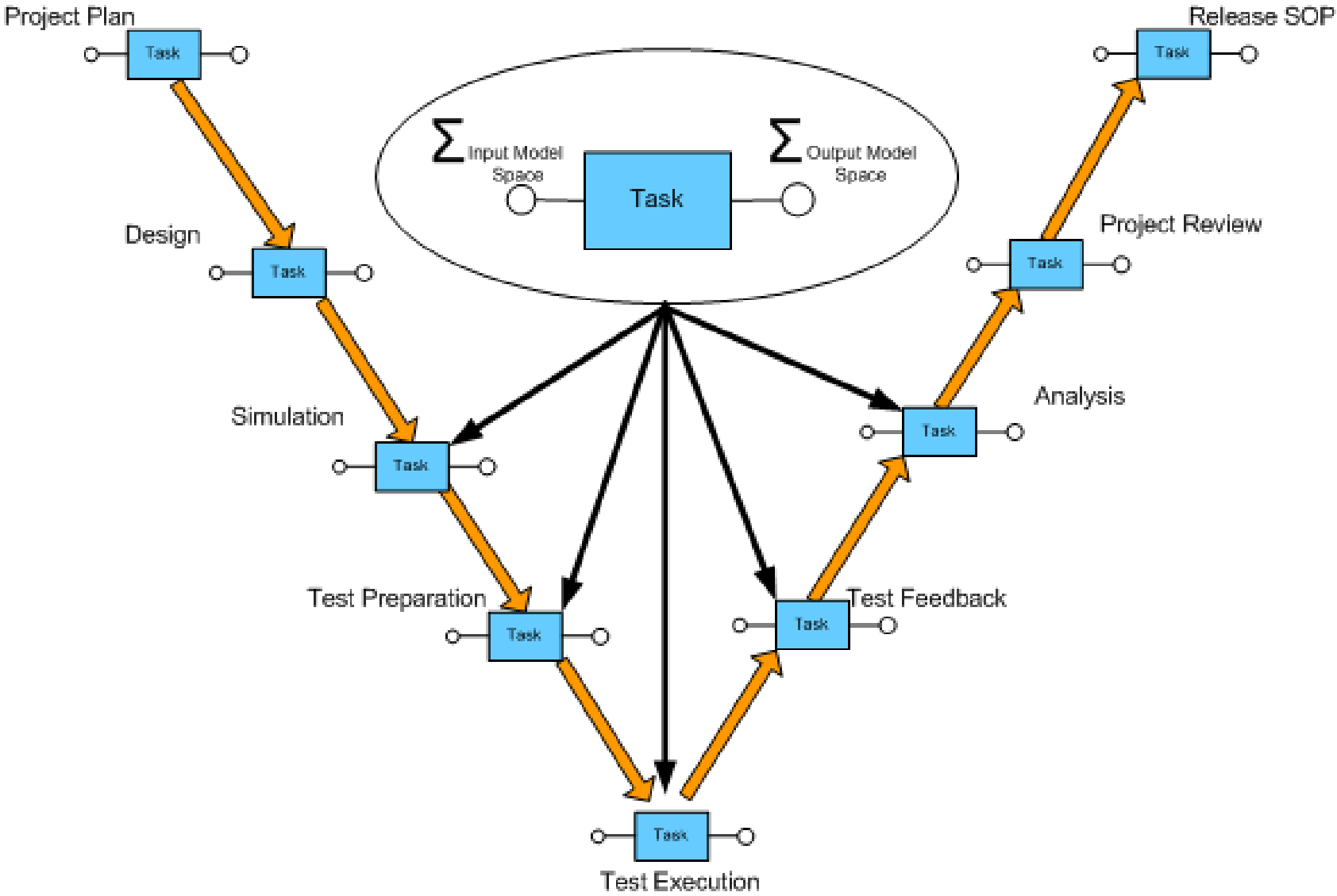
The Product Delivery Cycle can be viewed as a Contiguous Process.

It comprises a series of discrete tasks, the sequence of which is generally dictated by the output of the previous task.

During the Product Delivery Process many Engineers from different disciplines will work on various aspects of the design.

A consistent coherent environment for handling the Product / Test data is essential.

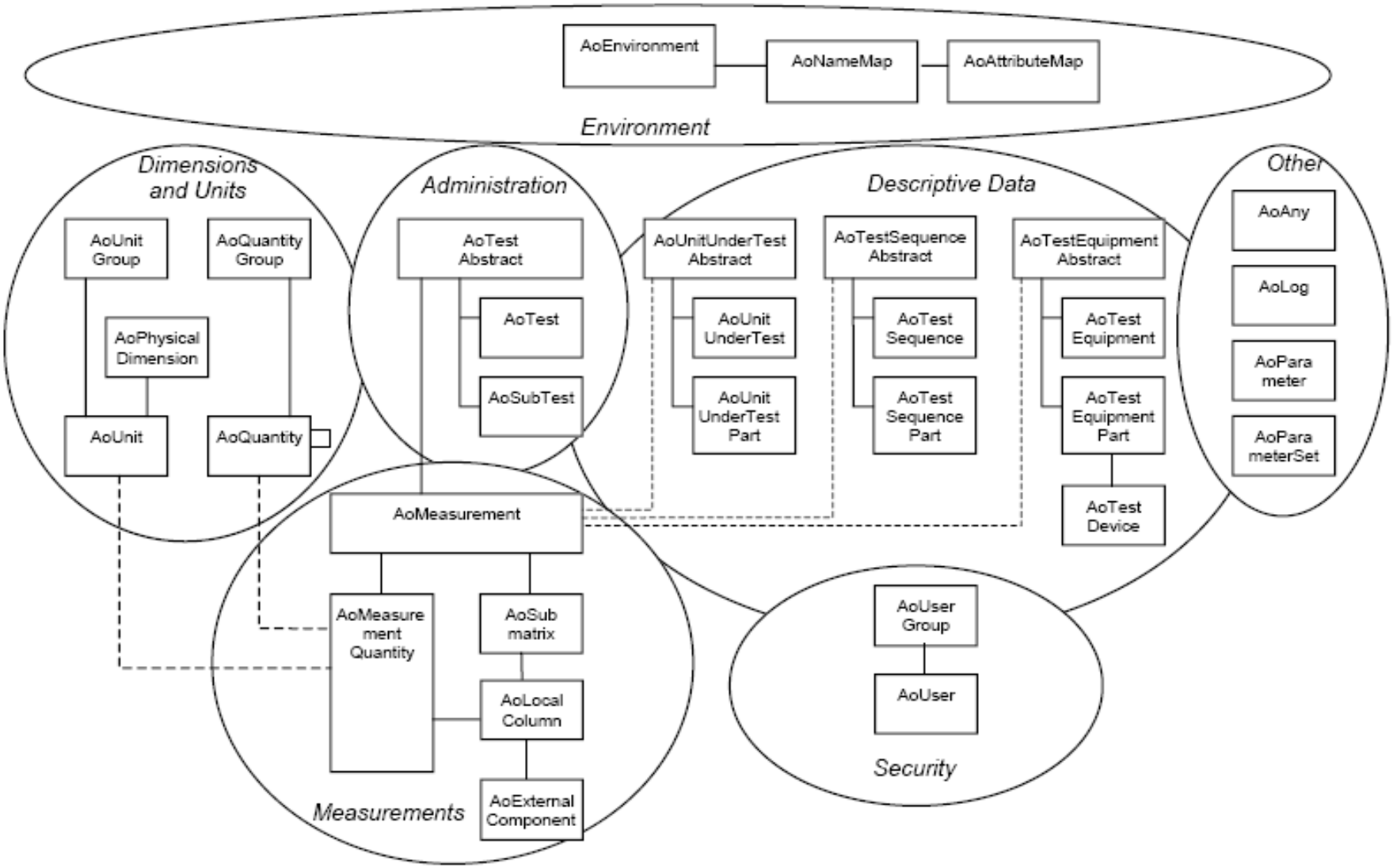
Model-based Approach



Model-based Approach

- The focus of each contiguous process should be an Application Data Model.
- It is better to have numerous models (each optimal for a given process) rather than one monolithic model which attempts to describe every process.
- The approach is generic and will work for any Application Data Model(s) providing it is applied consistently.
- The ASAM-ODS standard is widely accepted within industry and is sufficiently generic to cover all Engineering instances. It defines a Base Model from which Application Data Models can be derived.

ODS Base Model

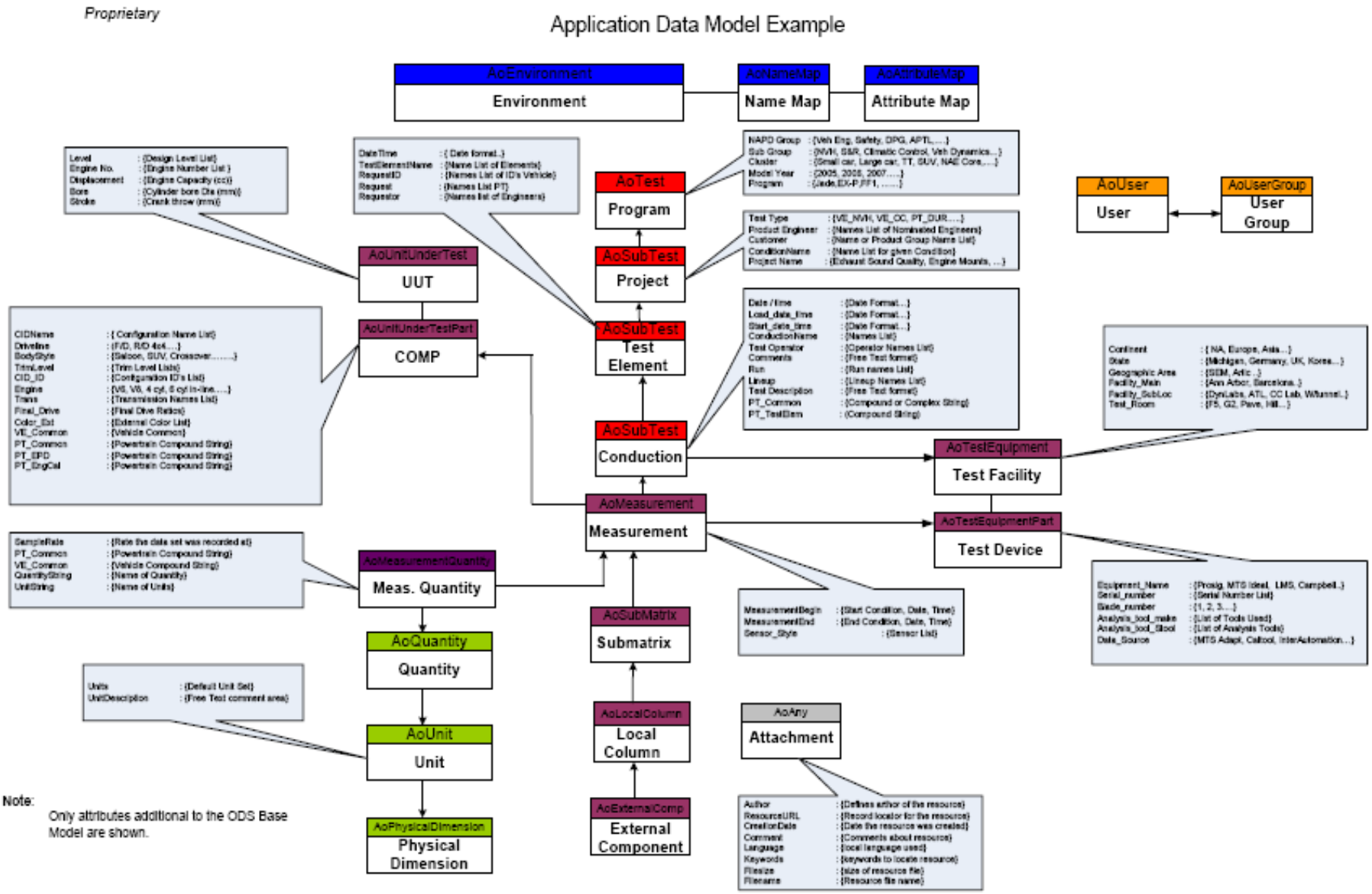


Current ASAM-ODS Approach

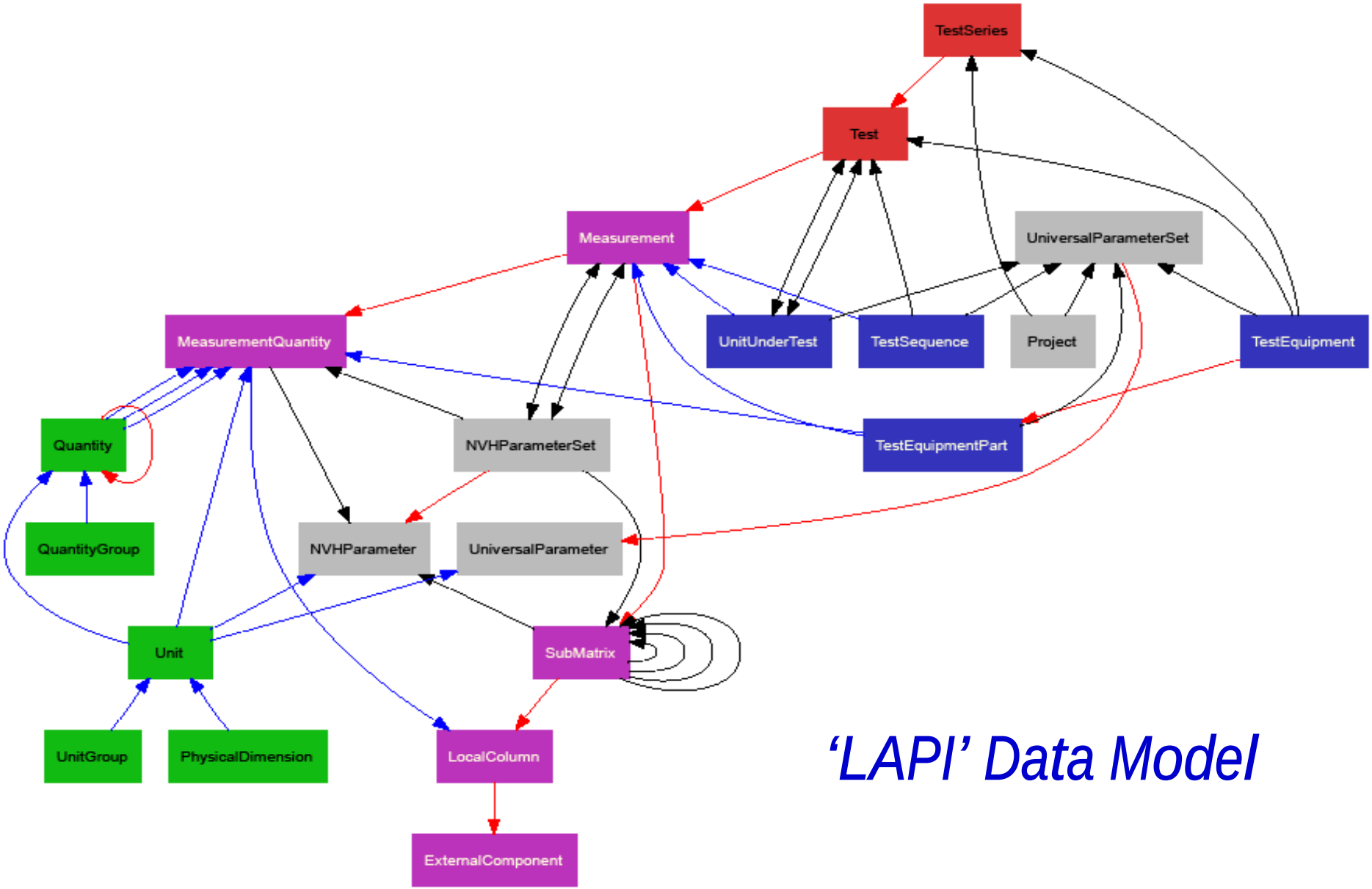
However;

- It is seen to be too complex.
- The Benefits are not clear to the whole of the Enterprise.
- Questions of how it integrates with Legacy systems.
- No real feeling of ownership.
- Overkill for small installations.

Application Data Model

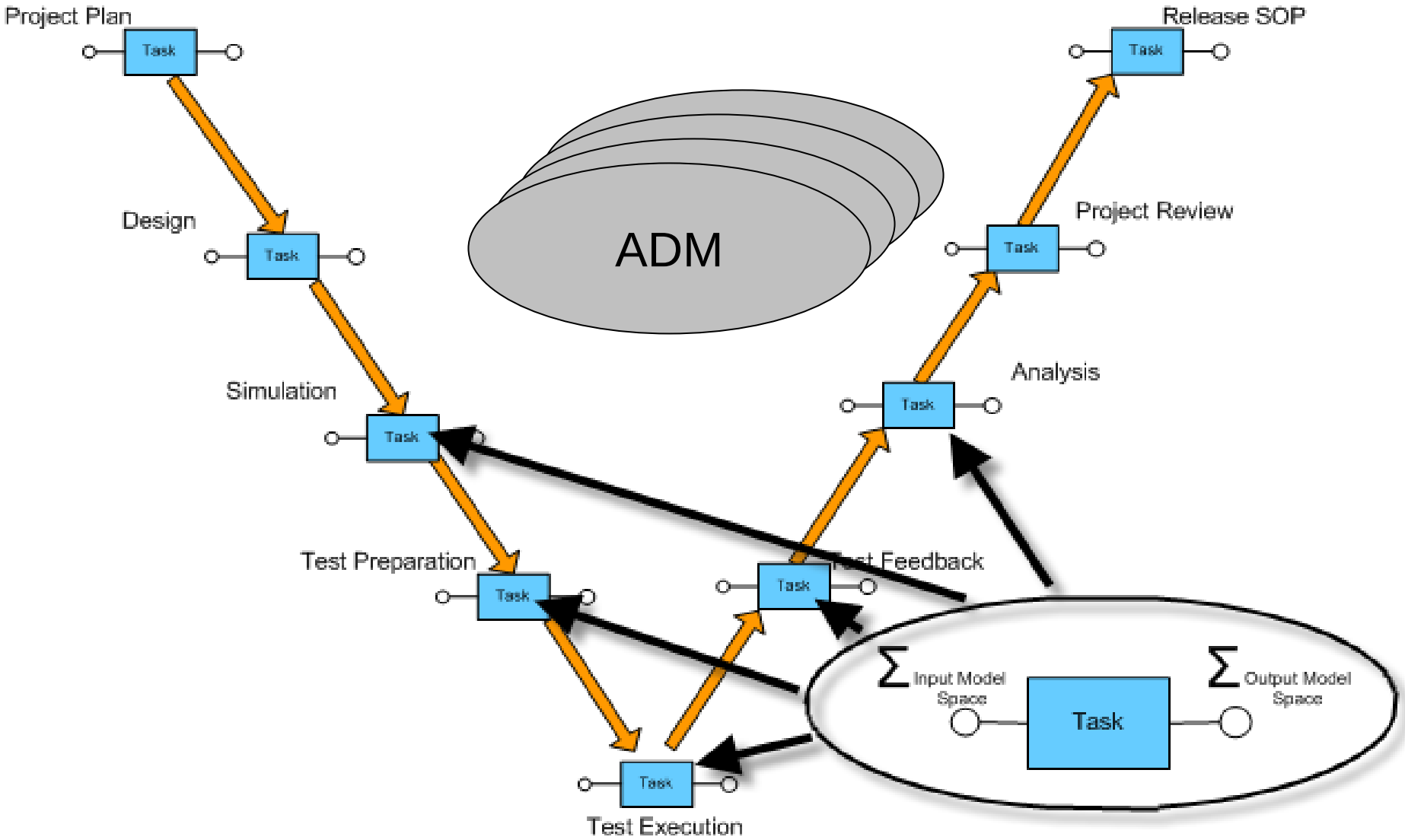


Application Data Model



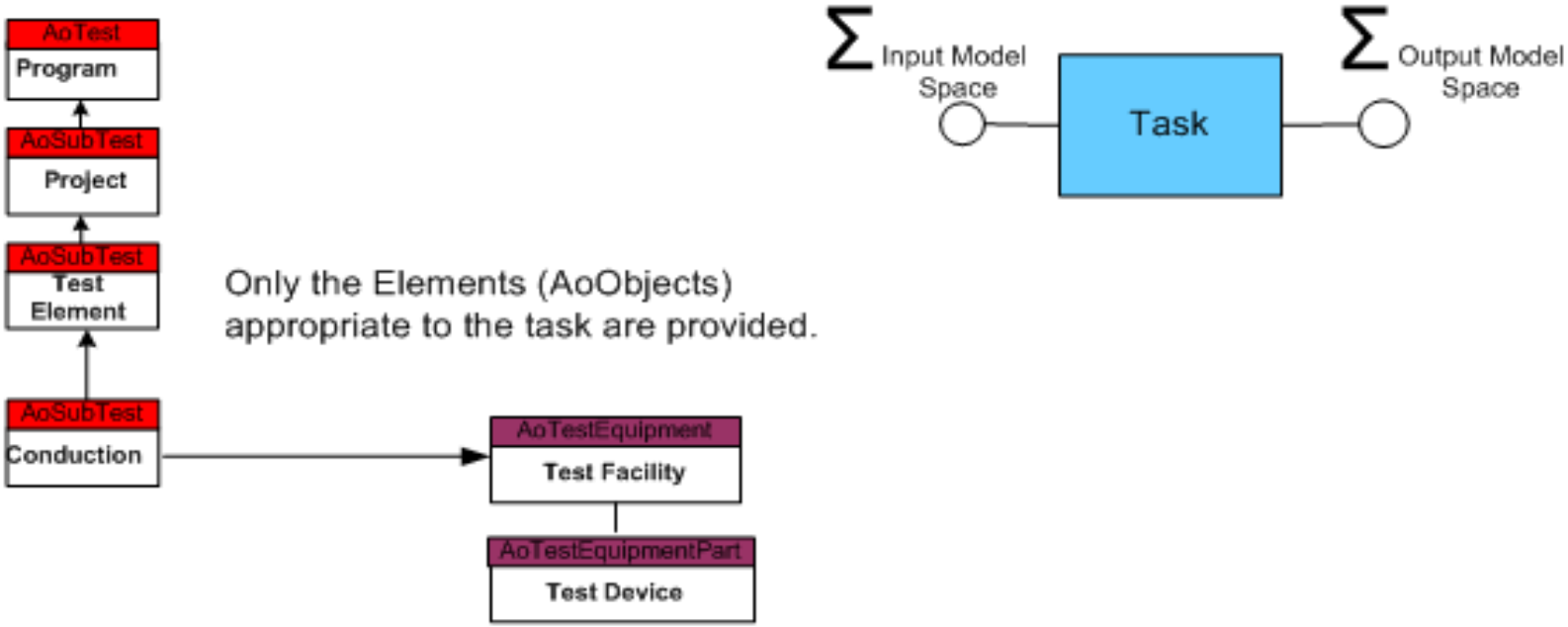
'LAPI' Data Model

Model-based Approach



Model-based Approach

The Σ Input Space is defined in terms of **LOCAL** ADM's



Only the Elements (AoObjects) appropriate to the task are provided.

Attribute Names (Metadata terms)

Properties i.e. mandatory/optional, data type, range

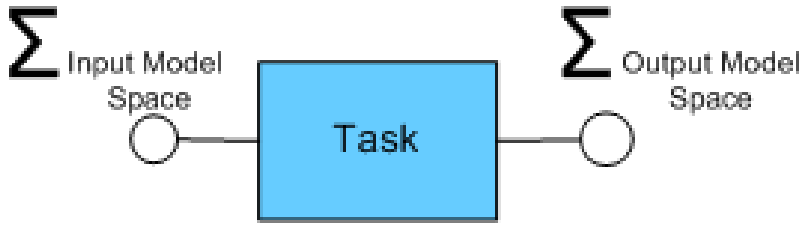
Associated with AoObject attribute names are the metadata rules:-

1) Naming Convention for any metadata term.
2) Alias / mapping to other metadata terms.
3) Extended list of primary & supplementary metadata attributes.
4) Acceptable contents ranges / lists for each metadata term
5) Sources for metadata terms (from single element to full Application Data Model).

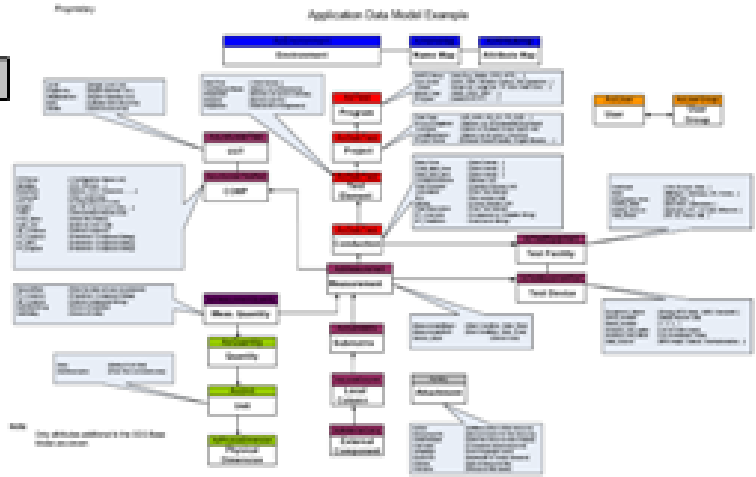
Associated formulae (Equation Management)

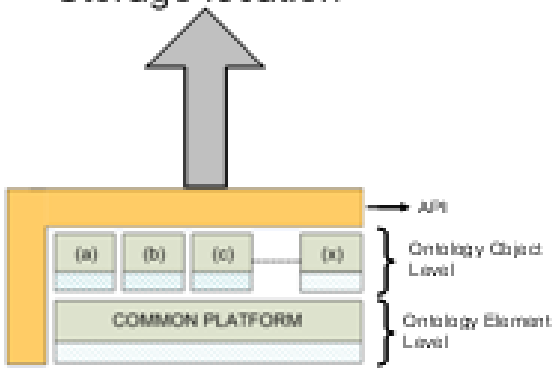
Model-based Approach

The Σ Output Space is defined in terms of **GLOBAL** ADM's



1. Full Target ADM
2. Output Format
3. Storage location





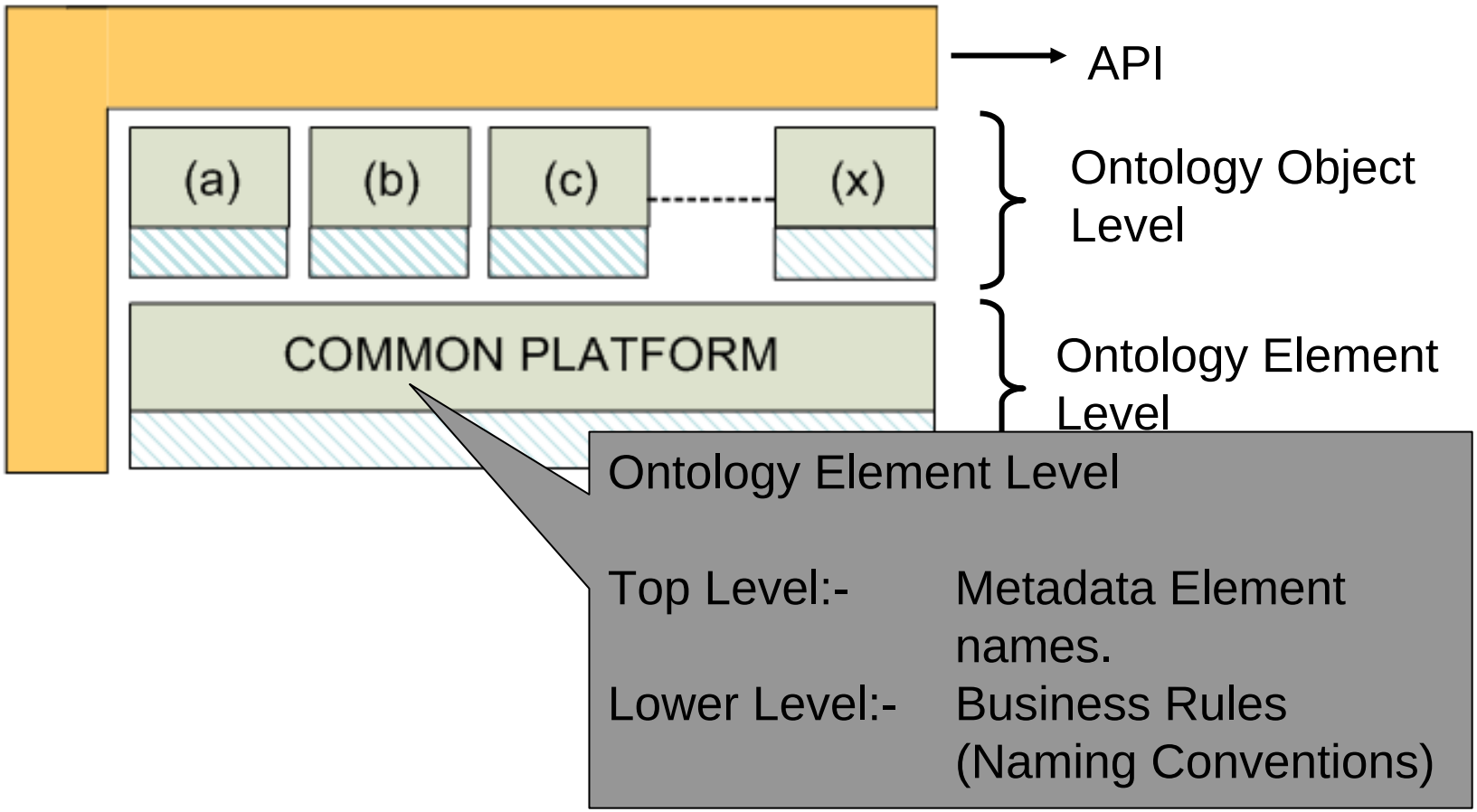
Implications

- 2 Services are required:
  - ODS Compliant Repository
    - Application Data Model(s)
    - ODS API
  - Full Metadata Management
    - Deployment mechanism
    - Metadata classification and grouping (Technical Metadata Standard).
    - Open API.

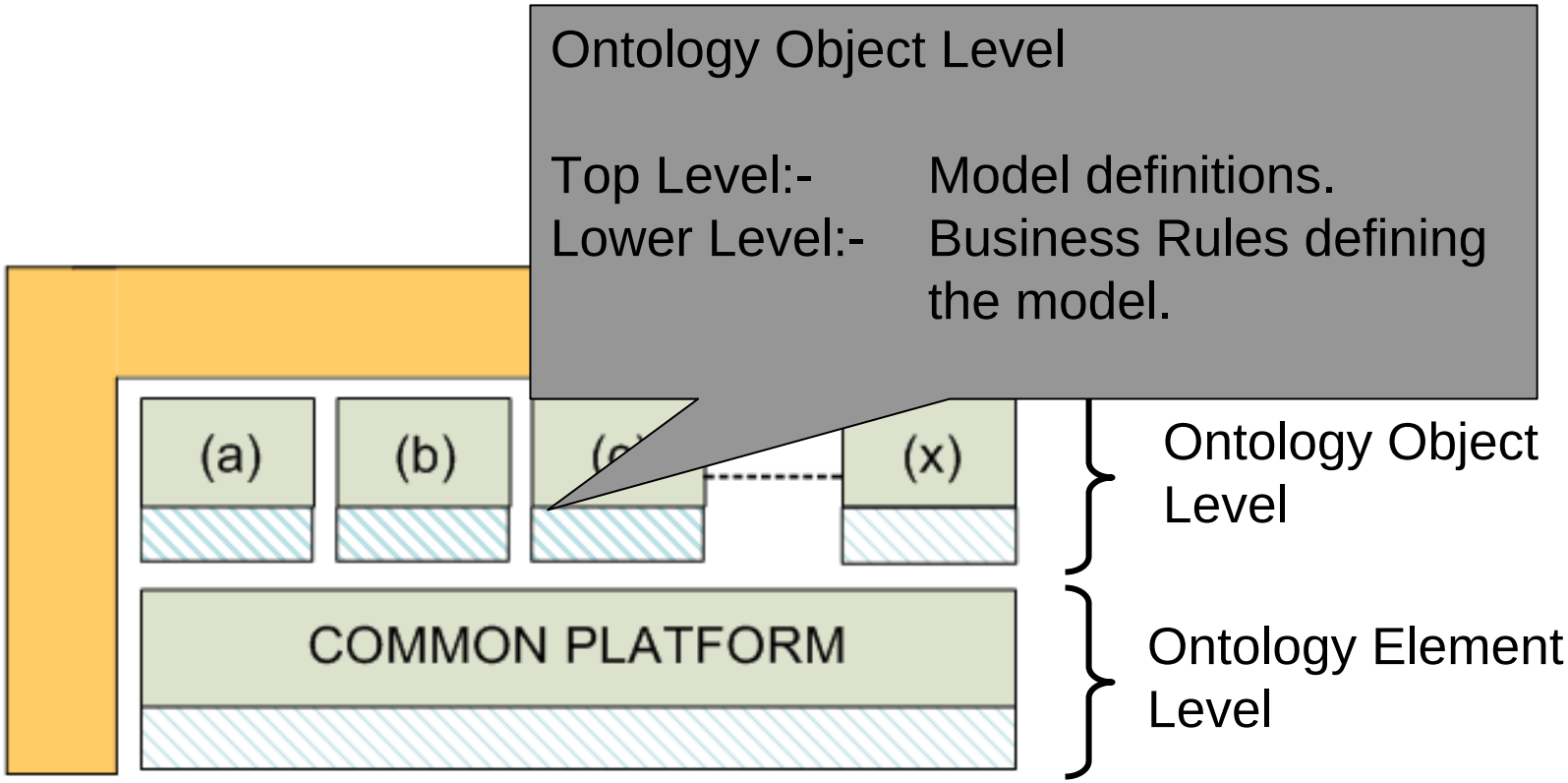
Open Data Systems: Identified Needs

- Need to exchange data between disparate system from different suppliers.
- One single Application Data Model would be inefficient for all the needs.
- Need to exchange data between stationary and mobile test systems.
- Solution needs to be enterprise wide.
- To obtain coherency, ideally, a single work surface should be derived for data exchange.
- To obtain data integrity a single logical enterprise wide solution is required.
- A common open API is required to integrate disparate systems.

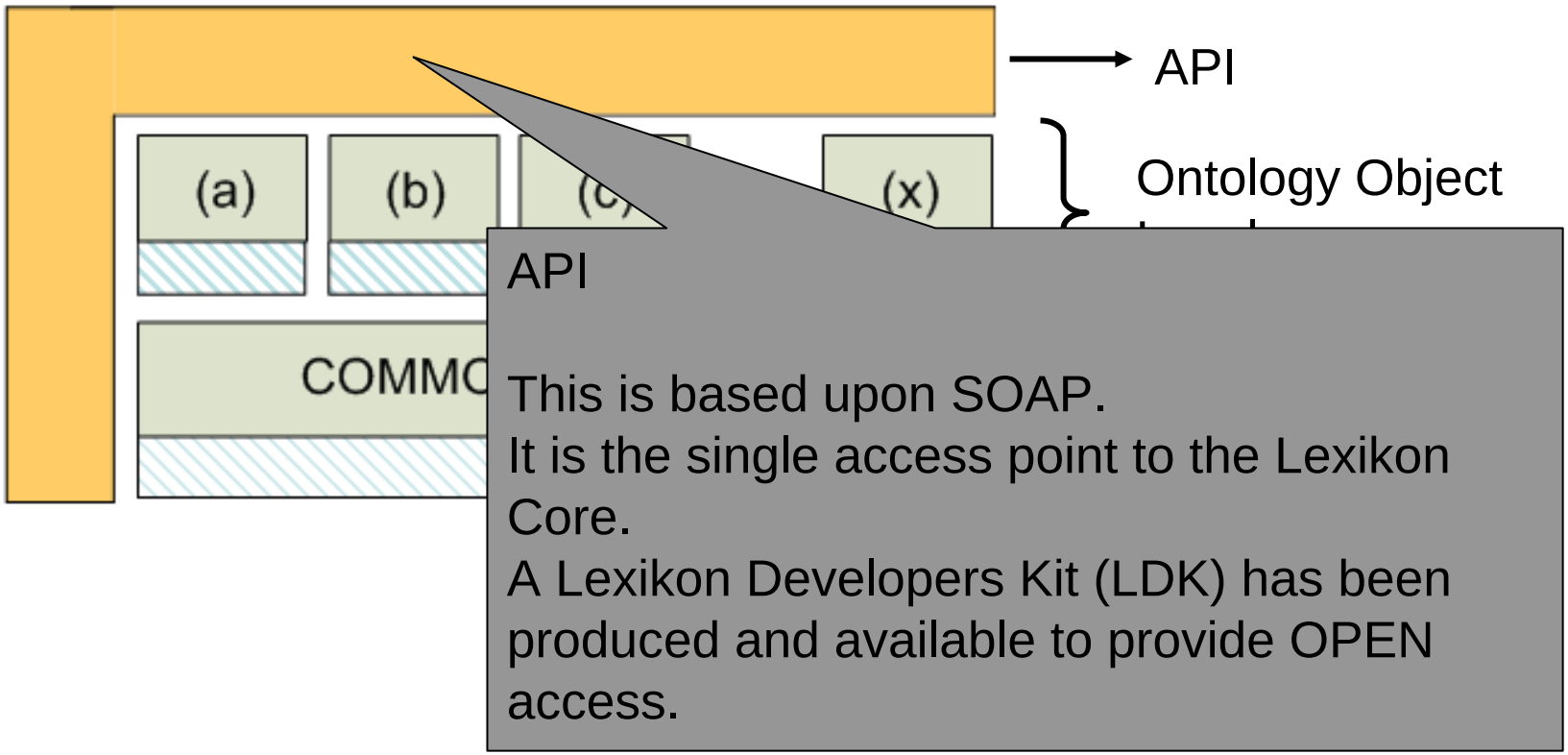
Service Environment - Lexikon



Service Environment - Lexikon



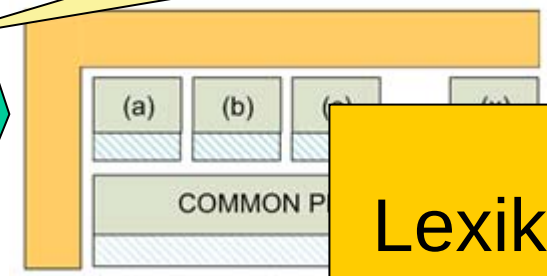
Service Environment - Lexikon



Implementation Framework – Test Define

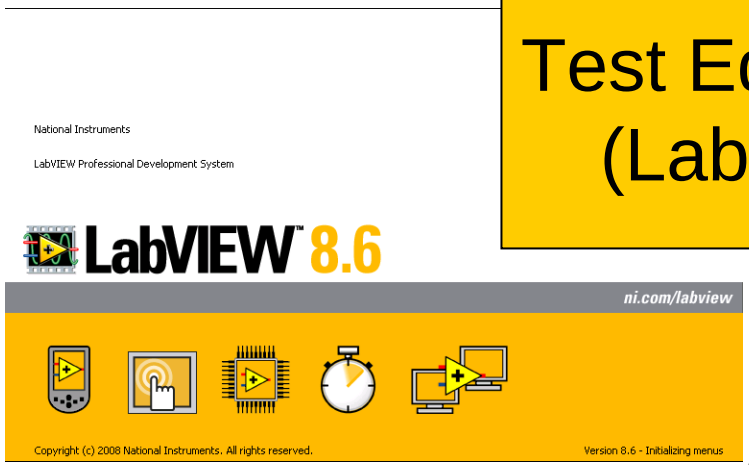
Test Equipment (LabVIEW)

Request for Test Profile Via Lexikon VI Sub-Palette

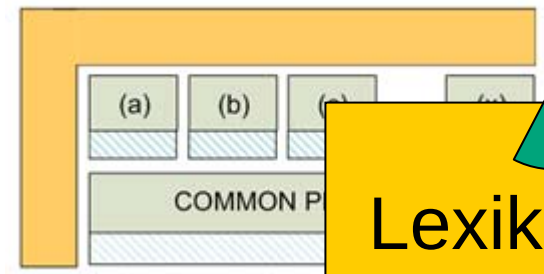


Lexikon Instance (In-Vehicle)

Implementation Framework – Test Define



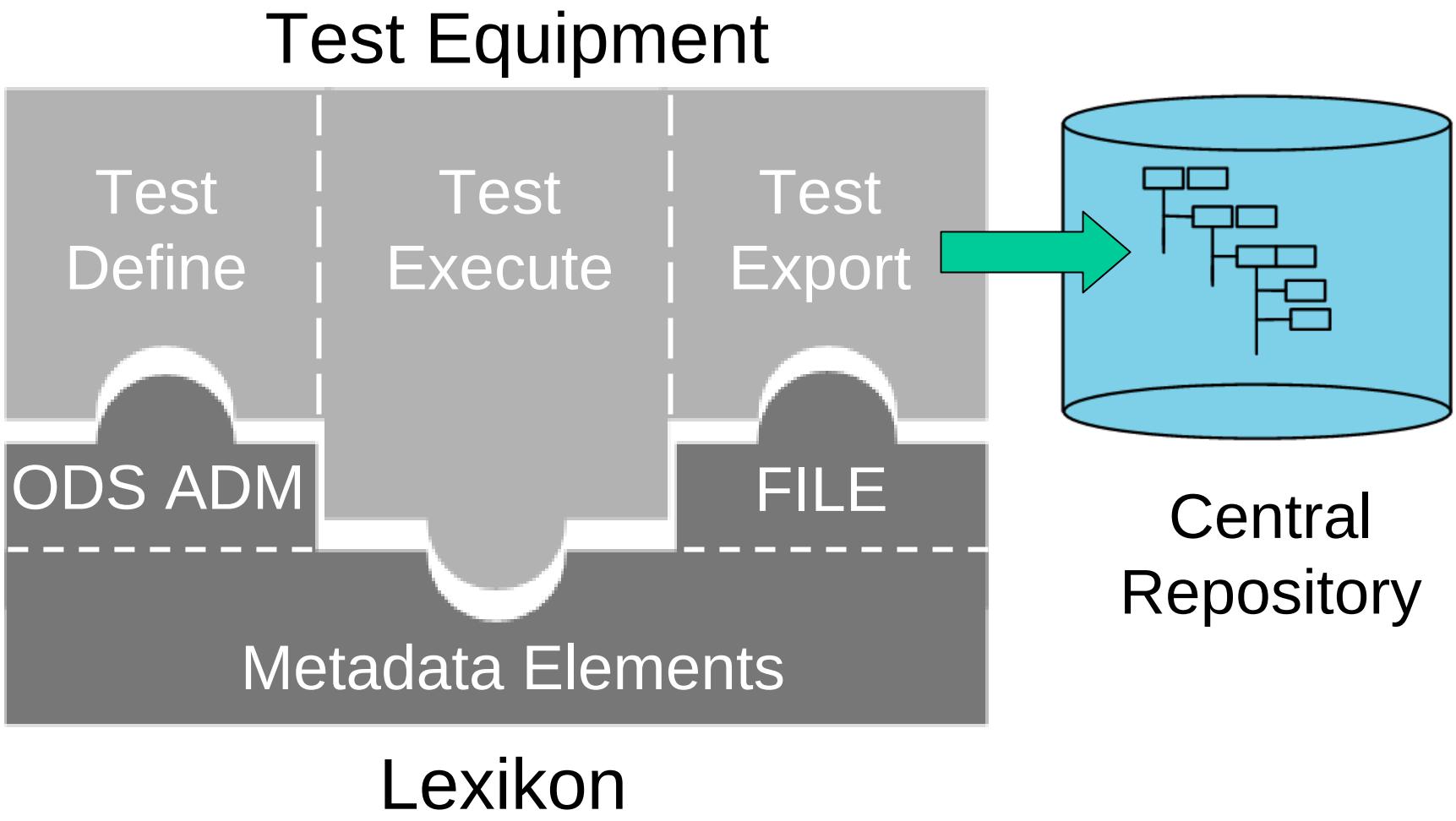
Test Equipment (LabVIEW)



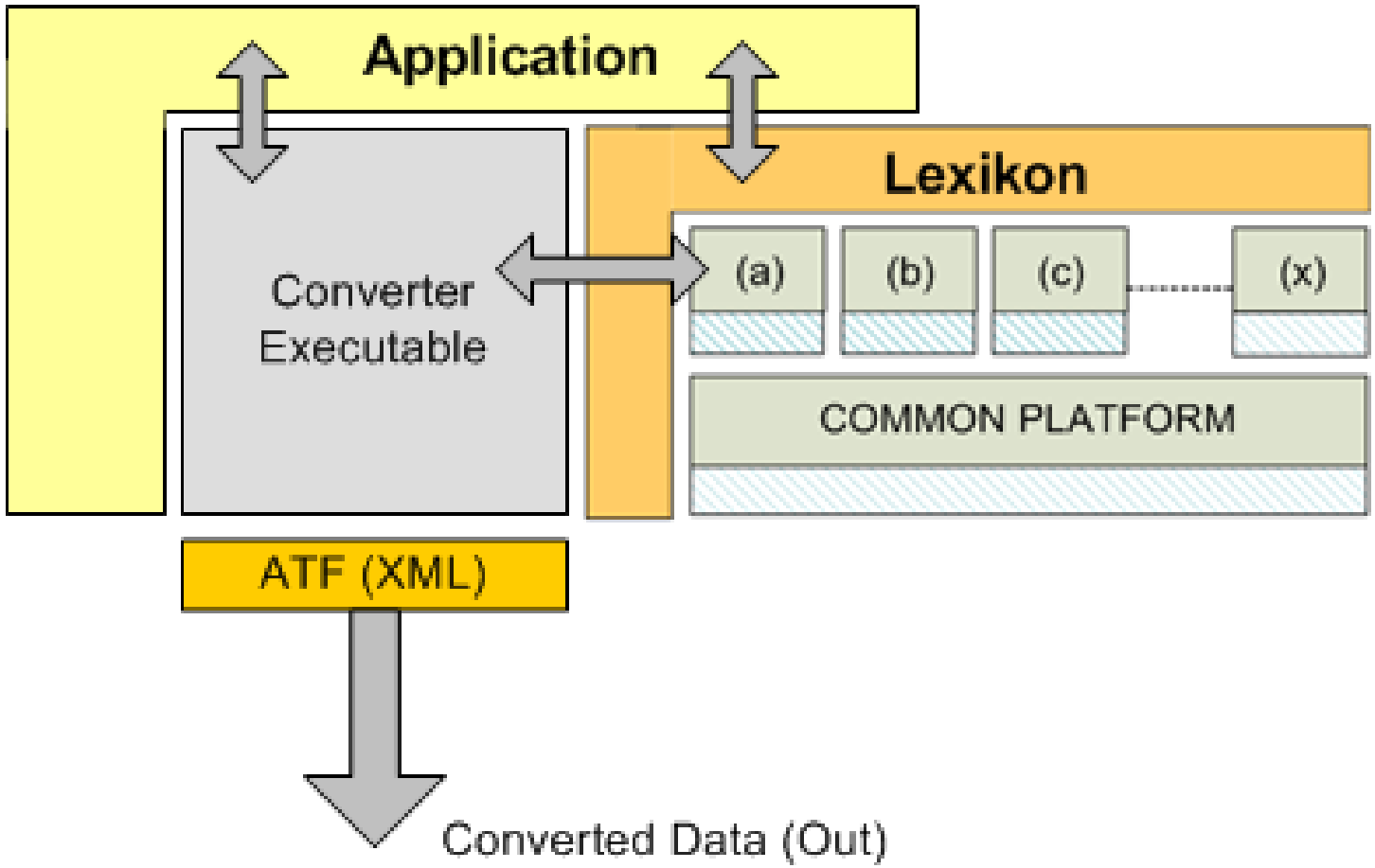
Lexikon I
(In-Ve

Returns:-
Test Profile
- Header Information
- Parameter Names

Implementation Framework - Operation



Application : ATF Converter



Summary

- Using Lexikon enables open extensible solutions.
- Capable of being applied to ODS + Legacy systems
- Ownership – Customer owns the process & the models.
- Modular; yet Enterprise wide solution.
- Open architecture
- Lexikon can be installed as site server (Test Beds) or single remote applications (Vehicles)
- It is installed as an embedded service and other software applications provide the work surface.

Conclusion

Thank you.

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