APPLYING ONTOLOGICAL APPROACH TO STORING CONFIGURATION DATA

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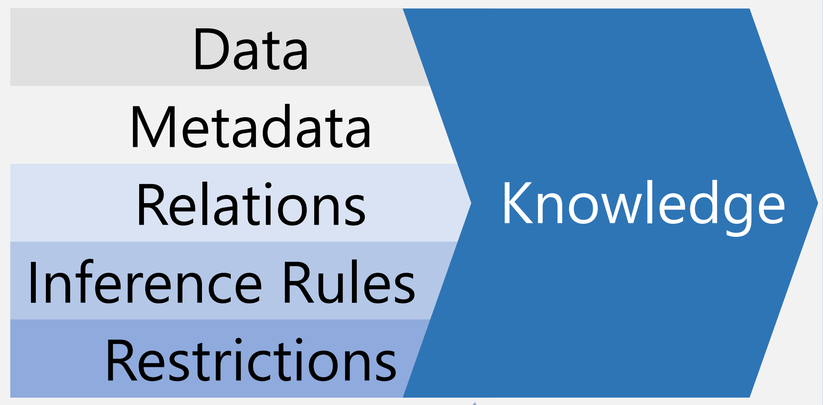
MOTIVATION

- Storing diverse facility data in a centralized way
- Avoiding data duplications and inconsistencies
- Automating control system software configuration
- Documenting facility information in various forms
- Tracking changes made by system users

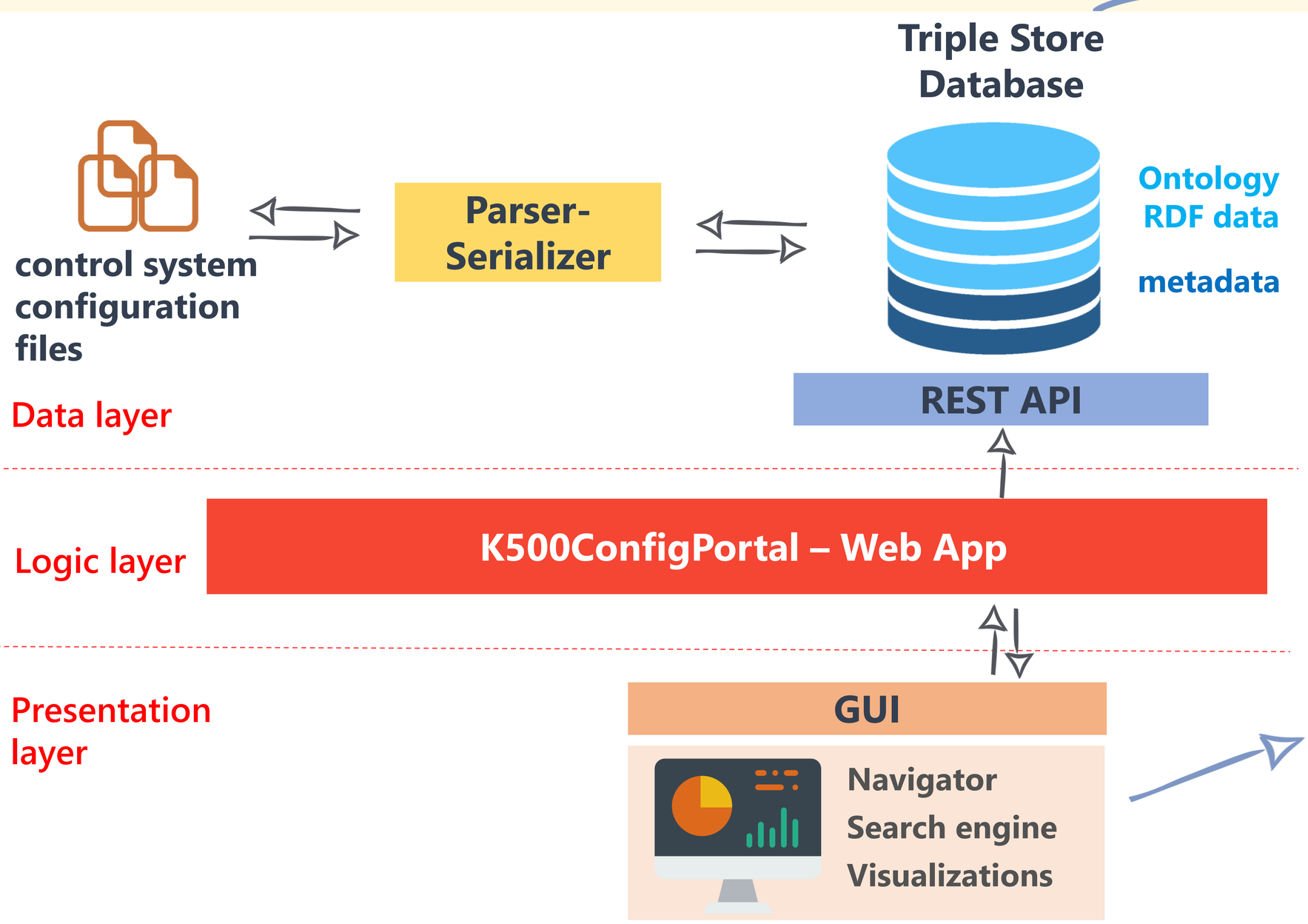
SOLUTION

Developing a **knowledge base** for configuration data of double-direction bipolar transfer line **K-500** at BINP

Ontology is a formal representation of concepts and relations of the domain of discourse, enriched by rules for inferring assumed knowledge.



ARCHITECTURE OF SEMANTIC PLATFORM



Knowledge base is built upon **ontology model**. Contains facts about facility in the form of triplet statements:

object + relation + subject

Consists of:

RDF Store	Storing
Reasoning Engine	Analysis and verification
Query Processor	Providing access to data

Web interface allows:

- Browsing objects of control system in a wiki-styled navigator
- Performing lexical search with semantic filters
- Executing queries to knowledge base, generating views and visualizations

BENEFITS OF ONTOLOGICAL APPROACH

- Expressing complex relations in a natural way
- Performing data consistency verification
- Inferring assumed knowledge out of existing facts