

WP8b Implementation

9 Jan 2008



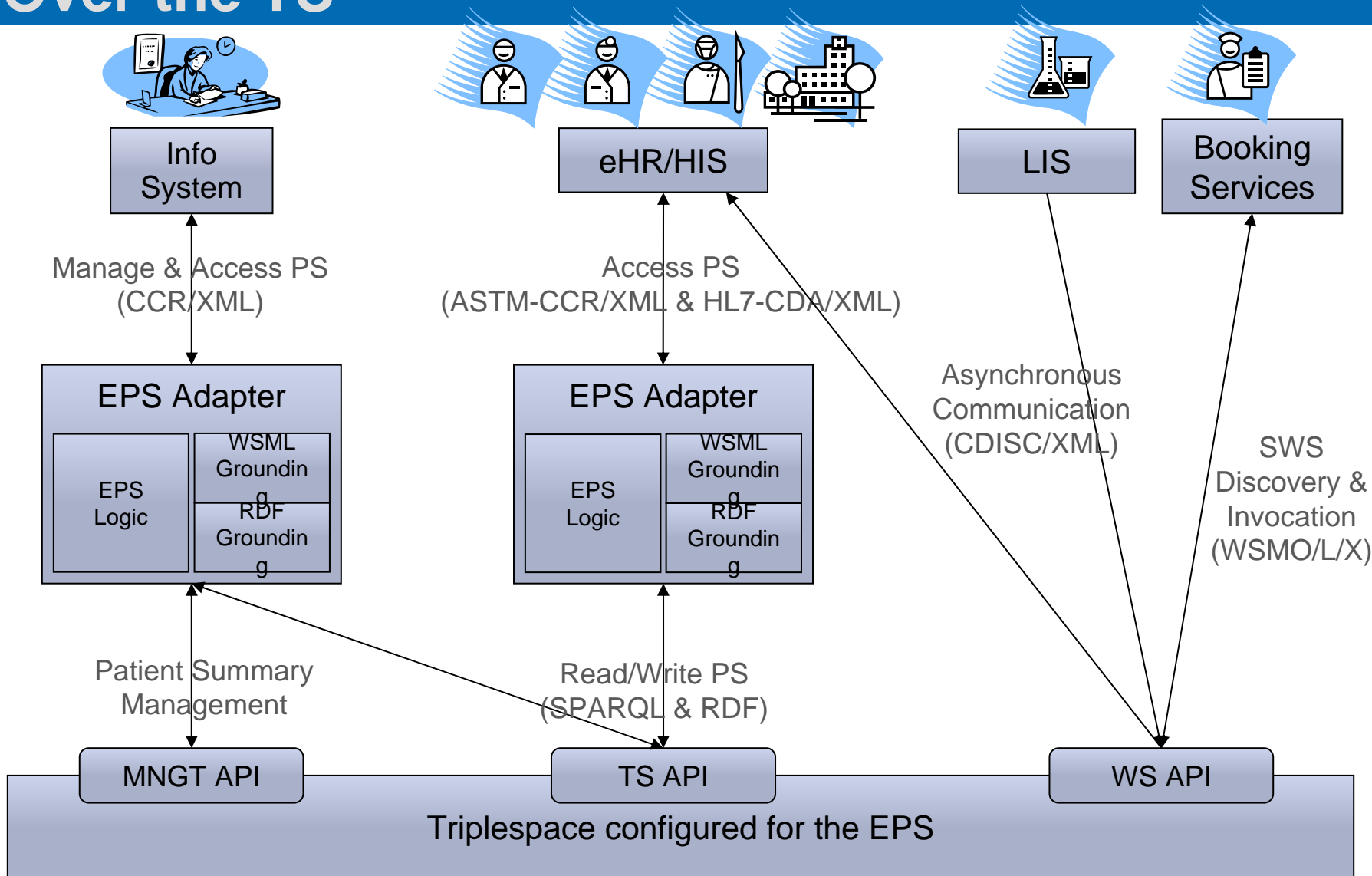
- What we have done so far

- Envisioned General Architecture

- 1st Prototype Architecture
 - External components
 - Interactions
 - Numbers

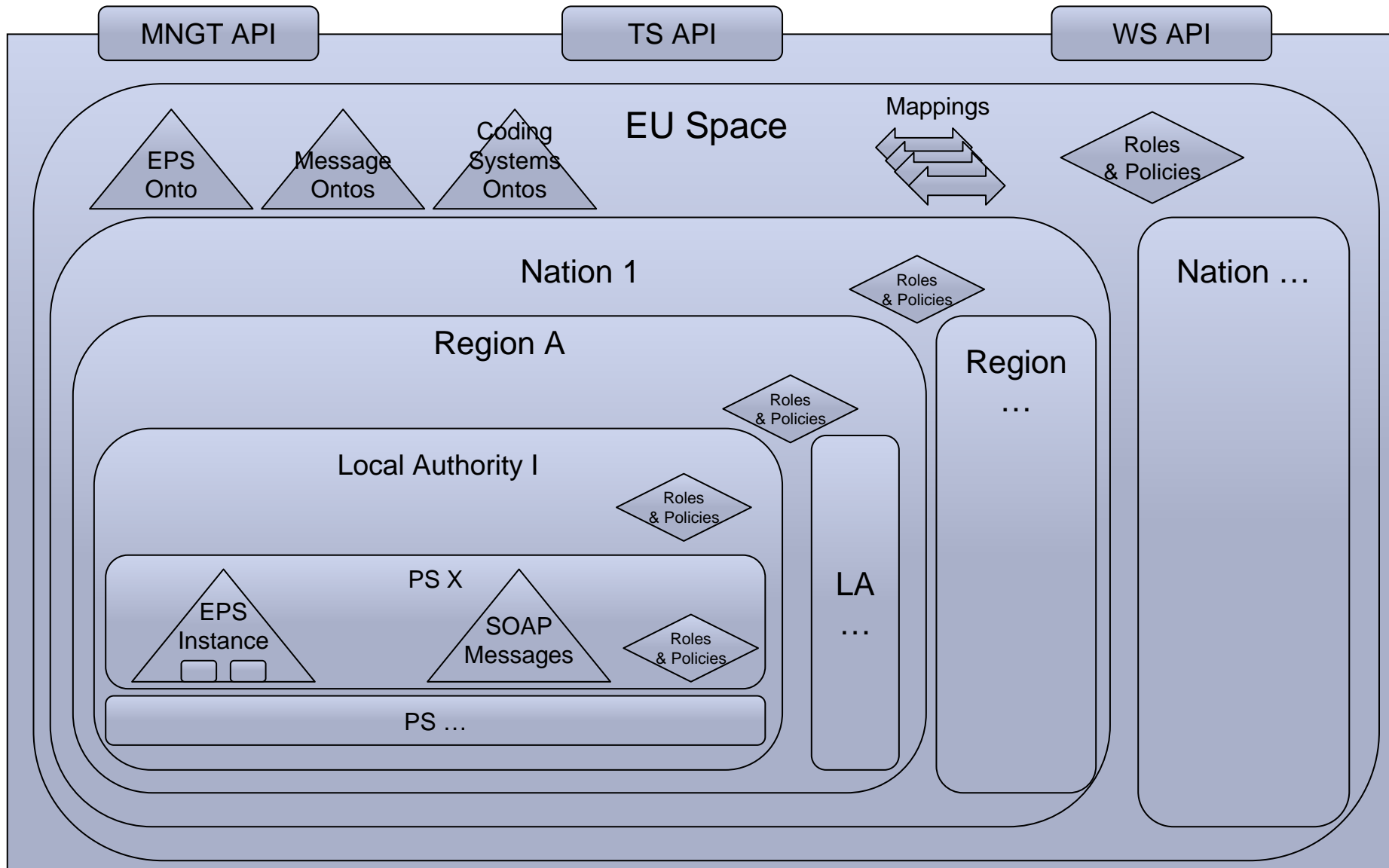
- **Ontologies**
 - **EPS Ontology**
 - Final version in WSML-Core, translatable in RDFS/RDF
 - Based on real-world standards
 - Models a full and realistic patient summary
 - **Coding systems ontologies**
 - ICD9, ICD10, Human Languages, LOINC, MeSH, MTH, NCI, RXNORM, UMLS
 - **eHealth messages**
 - CDA and CCR representation in WSML
- **Data**
 - Realistic EPS instance based on the Shared care path use case
 - Metrics for generating other instances with the tool
 - Initial examples of messages instances

Envisioned General Architecture Over the TS



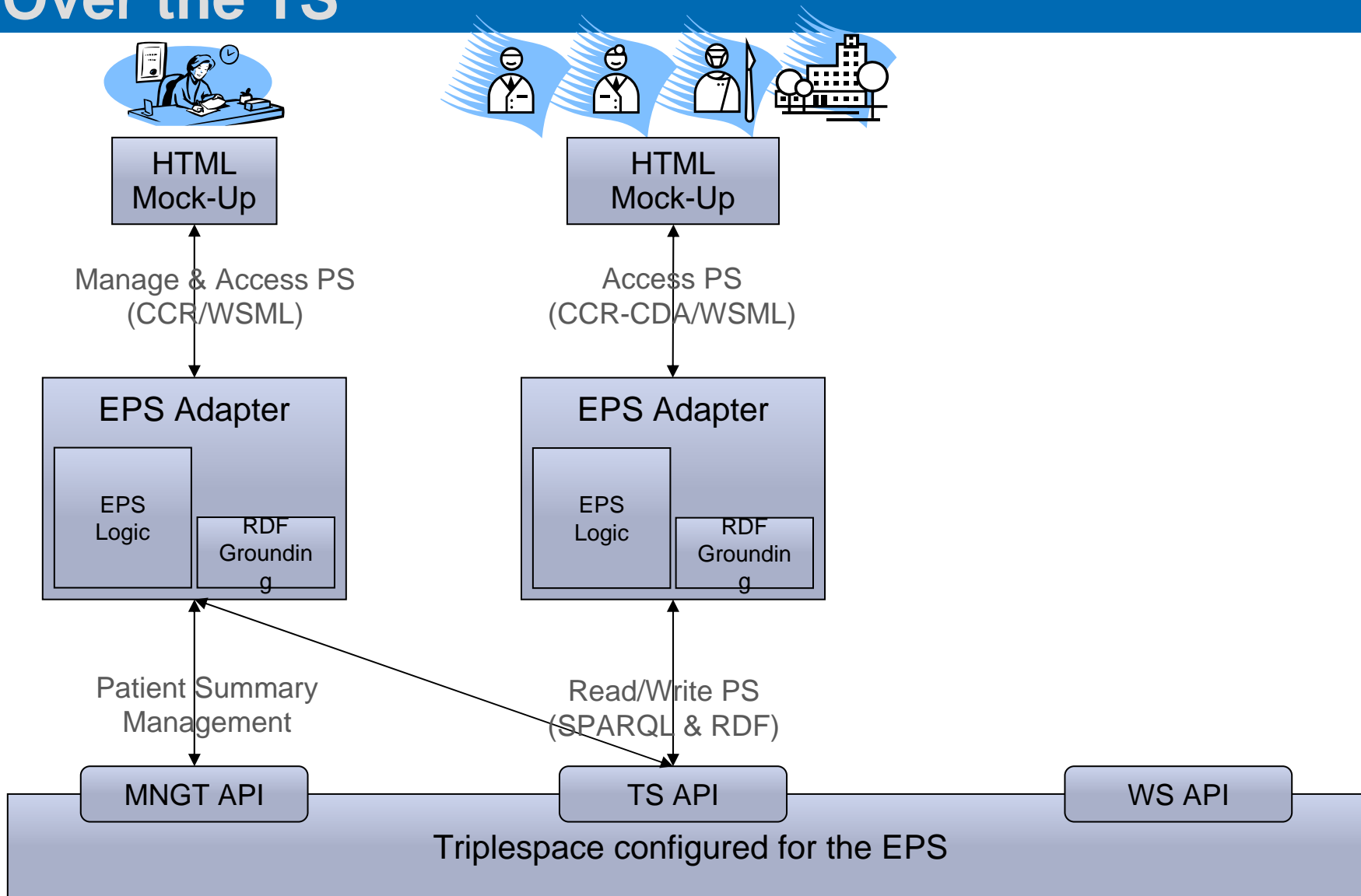
Envisioned General Architecture

Inside the TS - Hierarchy of spaces



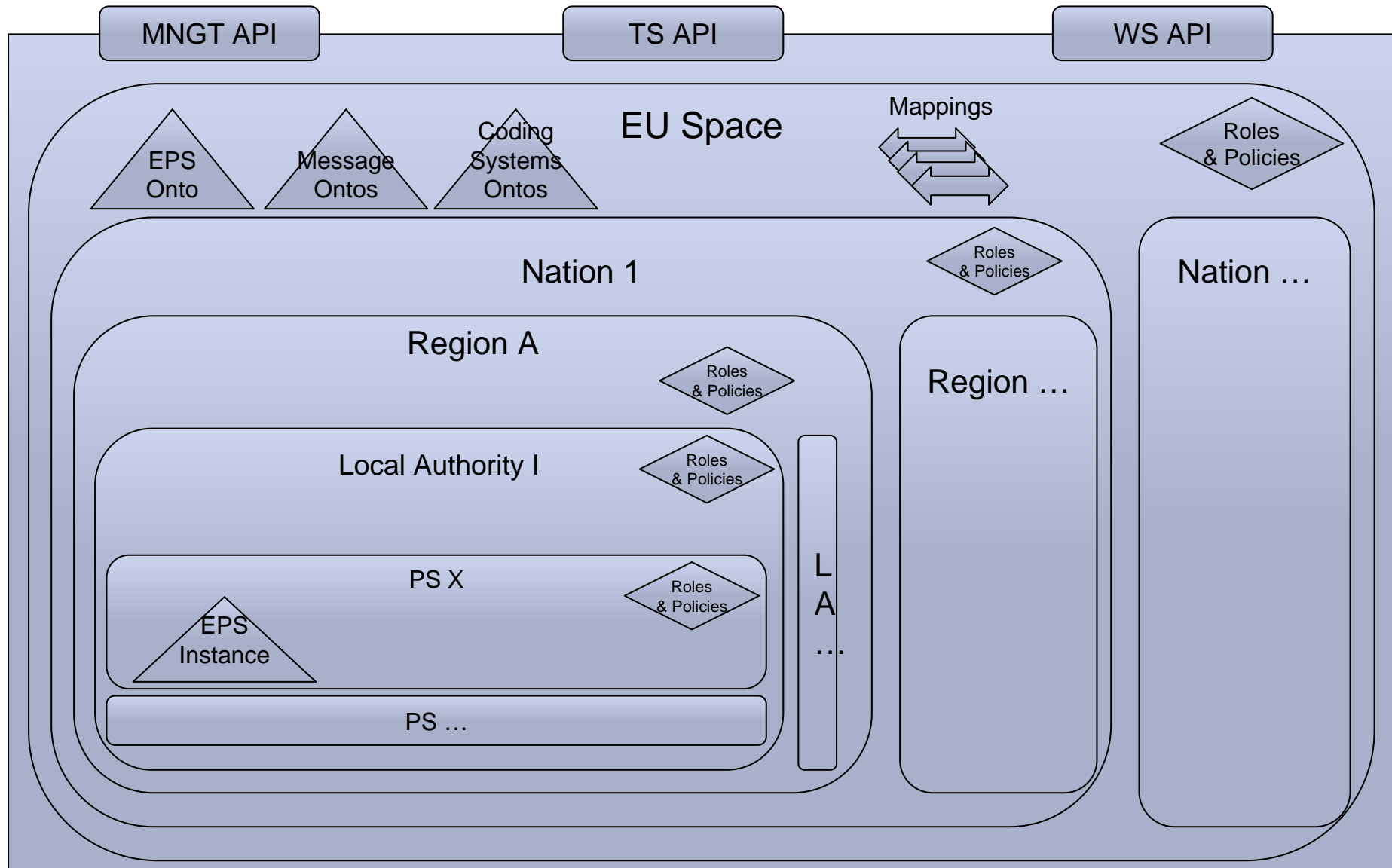
- Focus on demonstrating Triple Space capabilities
 - EPS Adapter
 - EPS logic for using MNGT API and TS API
 - RDF grounding component already available
 - HTML Mock-ups of external applications
 - Directly communicate using WSML messages
- WS API
 - WSMX Integration for SWS is planned after M28
 - Asynch invocation of WS is planned after the Review

1st Prototype Architecture Over the TS



1st Prototype Architecture

Inside the TS - Hierarchy of spaces



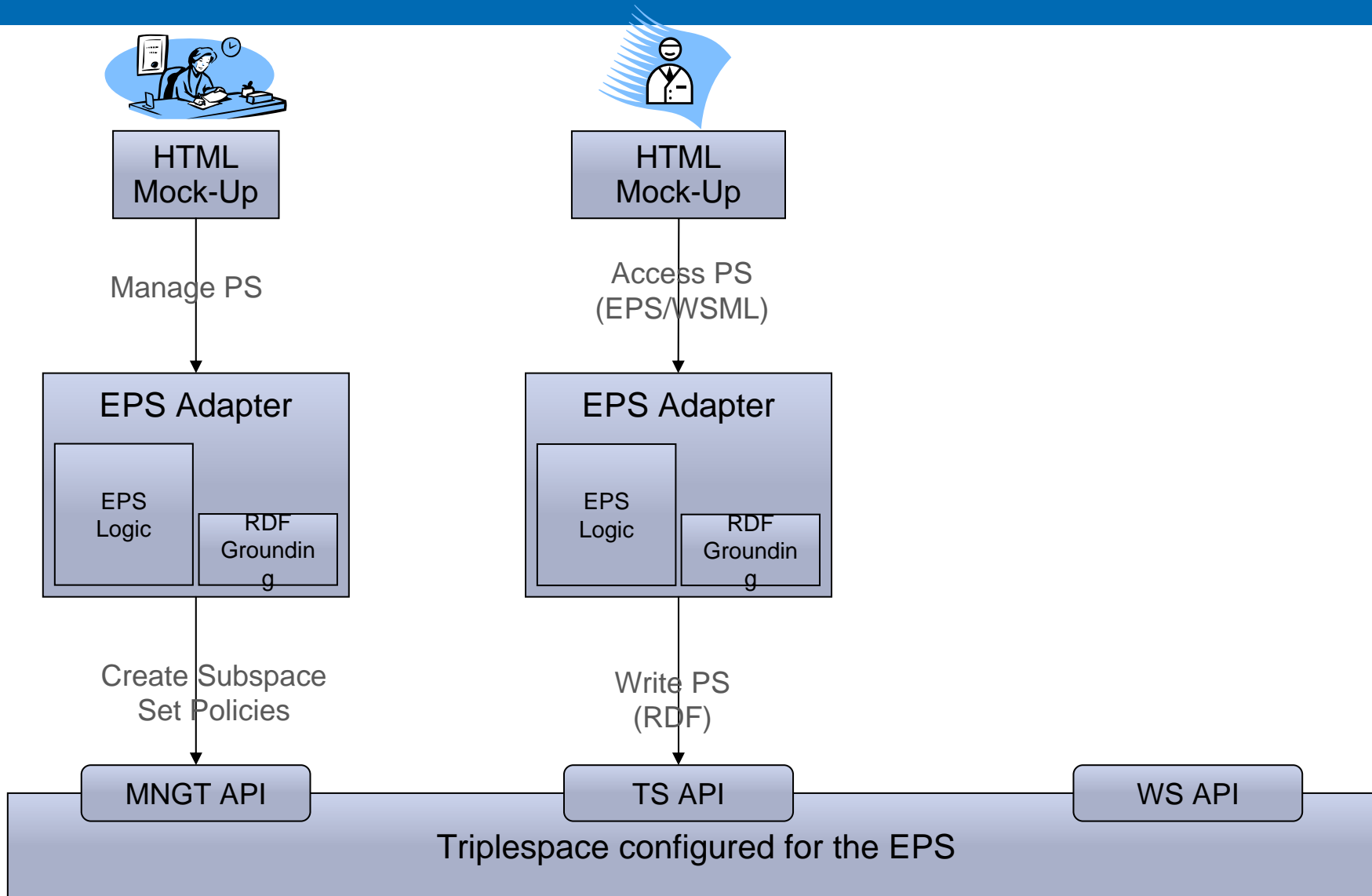
Step 0: PS Initialization

(Will not be shown at review)



- Creation of the subspace to store the summary of the citizen
 - Enabling the General Practitioner (GP) to access in read/write the summary of the citizen
 - MNGT API
 - Create space with an URL defined by the authority
 - Set security policies
- The GP publishes the summary of the citizen inside the citizen's subspace and subscribe for notifications when modifications occurs
 - TS API
 - Out a set of triples in the subspace
 - Subscribe for notification on modifications

Step 0: PS Initialization

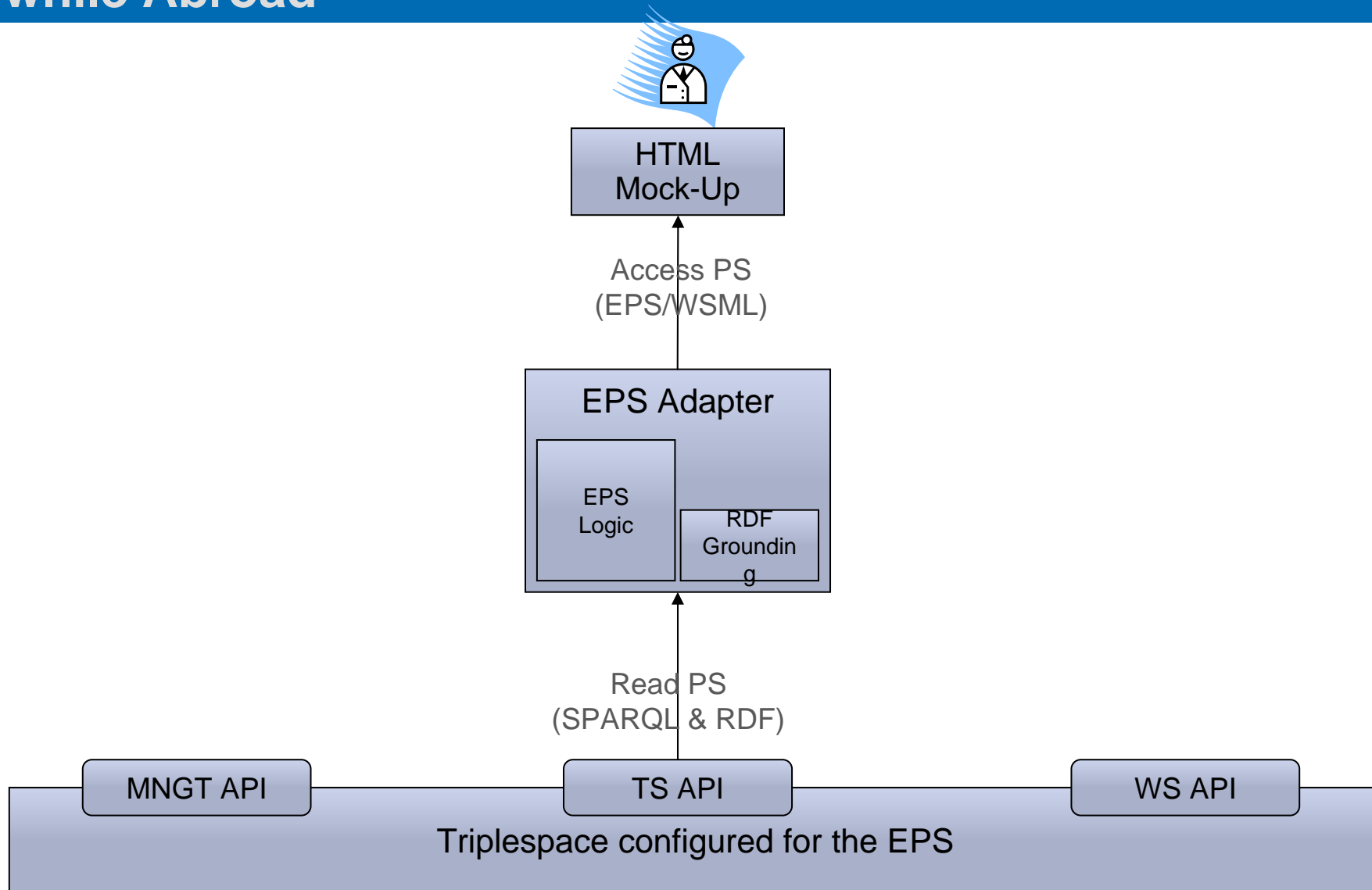


Step 1: The Toothache and the visit to the dentist while Abroad



- The dentist needs to read the summary of the citizen by knowing one of his real-world IDs
 - Discover the subspace by knowing the ID of the citizen
 - Open issue
 - Not necessary to query the whole EU space
 - A big Hash-Table may be enough
 - Use the internal DHT?
 - Use a subspace with a well-known URL with completeness?
 - Read the summary from the discovered subspace
 - TS API
 - RD set of triples with completeness with SPARQL query
 - Security policies enforcement to get only a subset of the summary

Step 1: The Toothache and the visit to the dentist while Abroad



Step 2: The Laboratory Examination for Additional Control of Patient Status



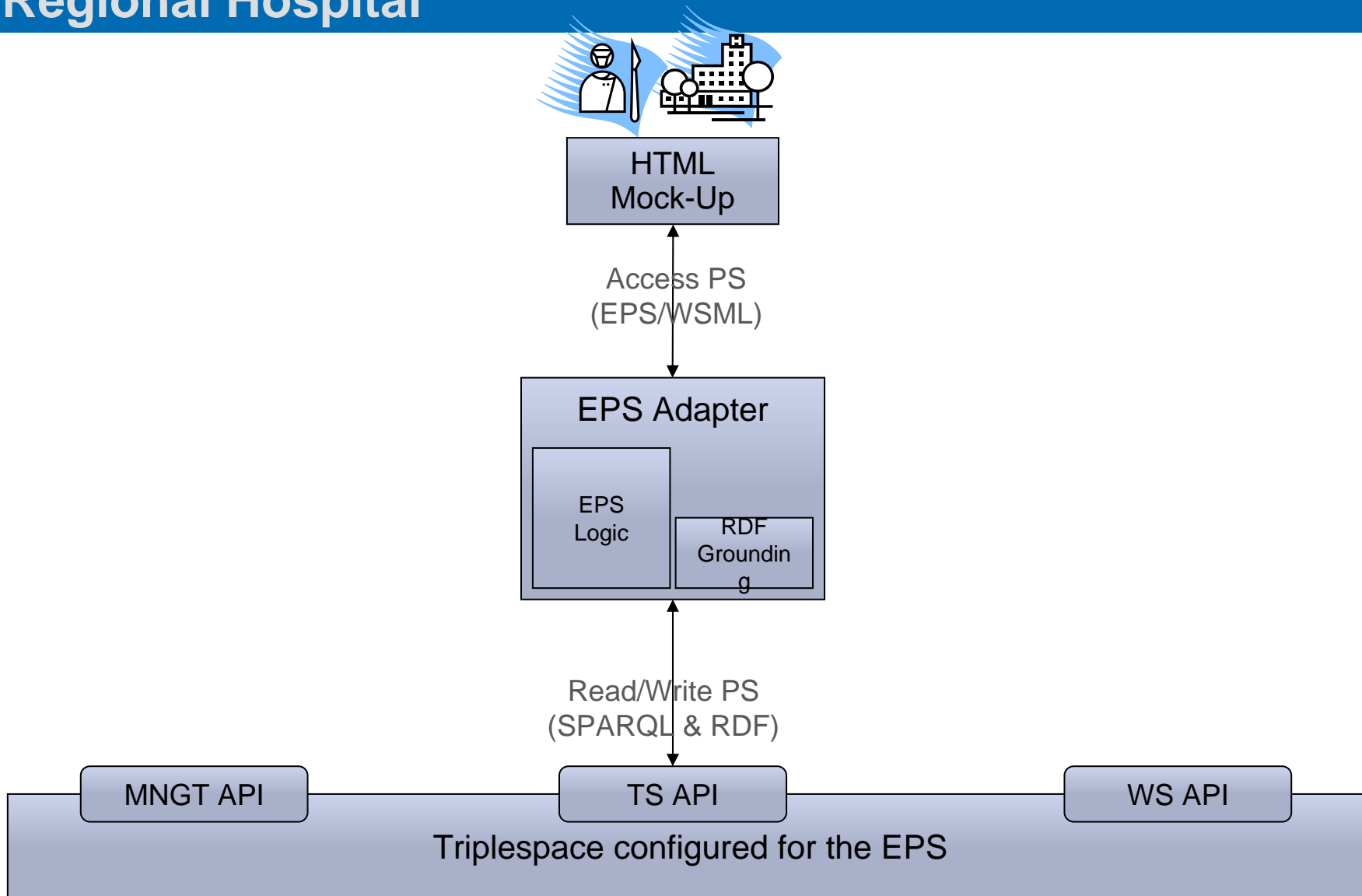
- This step uses SWS and WS asynch invocation
 - Not in the prototype

Step 3: The Surgical Operation at a Regional Hospital



- The specialist discovers and reads the summary of the citizen
 - TS API
 - RD and SPARQL with completeness
- The specialist updates the summary by adding another record to the subspace
 - TS API
 - Out a set of triples in the subspace

Step 3: The Surgical Operation at a Regional Hospital

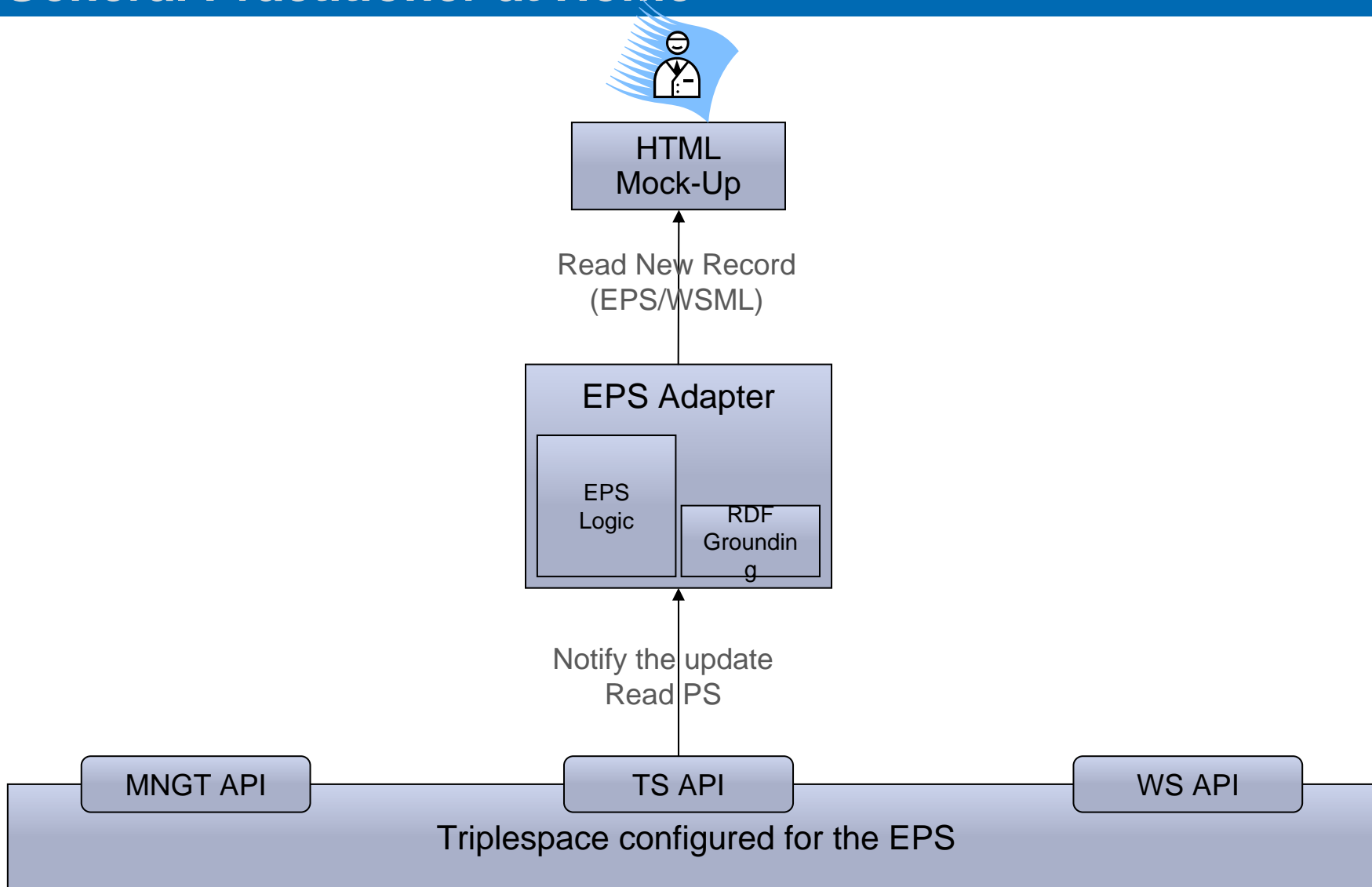


Step 4: The Notification to the General Practitioner at Home



- The eHR of the GP is notified by the TS providing information about the added record
 - TS API
 - Notification of a set of triple with completeness
 - RD the updated record in the summary

Step 4: The Notification to the General Practitioner at Home



- Full Domain
 - 500.000.000 citizens in Europe
 - 5.000 HA in Europe
 - 100.000 Citizens/HA average
- Full Infrastructure
 - 500.000.000 summaries at whole
 - 1.000.000.000 subspaces at whole (about 2 per citizen)
 - 1.000 triples/summaries
 - 500.000.000.000 triples at whole
- Per kernel
 - 100.000 summaries/kernel
 - 200.000 subspaces/kernel
 - 100.000.000 triples/kernel

■ 3 Kernels

- England Health Authority
- South-Tyrolean Health Authority
- Italian Health Authority

■ 4 Actors

- English General Practitioner
- South Tyrolean Dentist
- Laboratory (through WS API)
- Italian Hospital

■ Interactions

- 2 MNGT API
- 6 TS API

■ Use case focused on one summary

- Generation of other summaries: ~100.000/Kernel

Proposal of Plan and Responsibilities

- Deadline of T8b.3 (implementation) is M28 (July)
 - Triplespace prototype planned for M24 (end of March)
 - Next Review is at M27 (June)
- Instances generation with the tool [Onto by end of January]
- EPS Adapter and Logic (RDF Storage is already available) [CEFRIEL with TID support by end of April]
- HTML Mock-ups [CEFRIEL by end of May]
- Mappings between messages and coding systems [TID by end of March]

Proposal of Plan and Responsibilities

- Deploy and configuration of the TS for the EPS scenario with ontologies, roles and policies [Onto by end of April]
- Integration for the review [All by end of May]
- Final integration [All by July]

- Deliverable D8b.2 [CEFRIEL and all by July]