

# WP8b Implementation

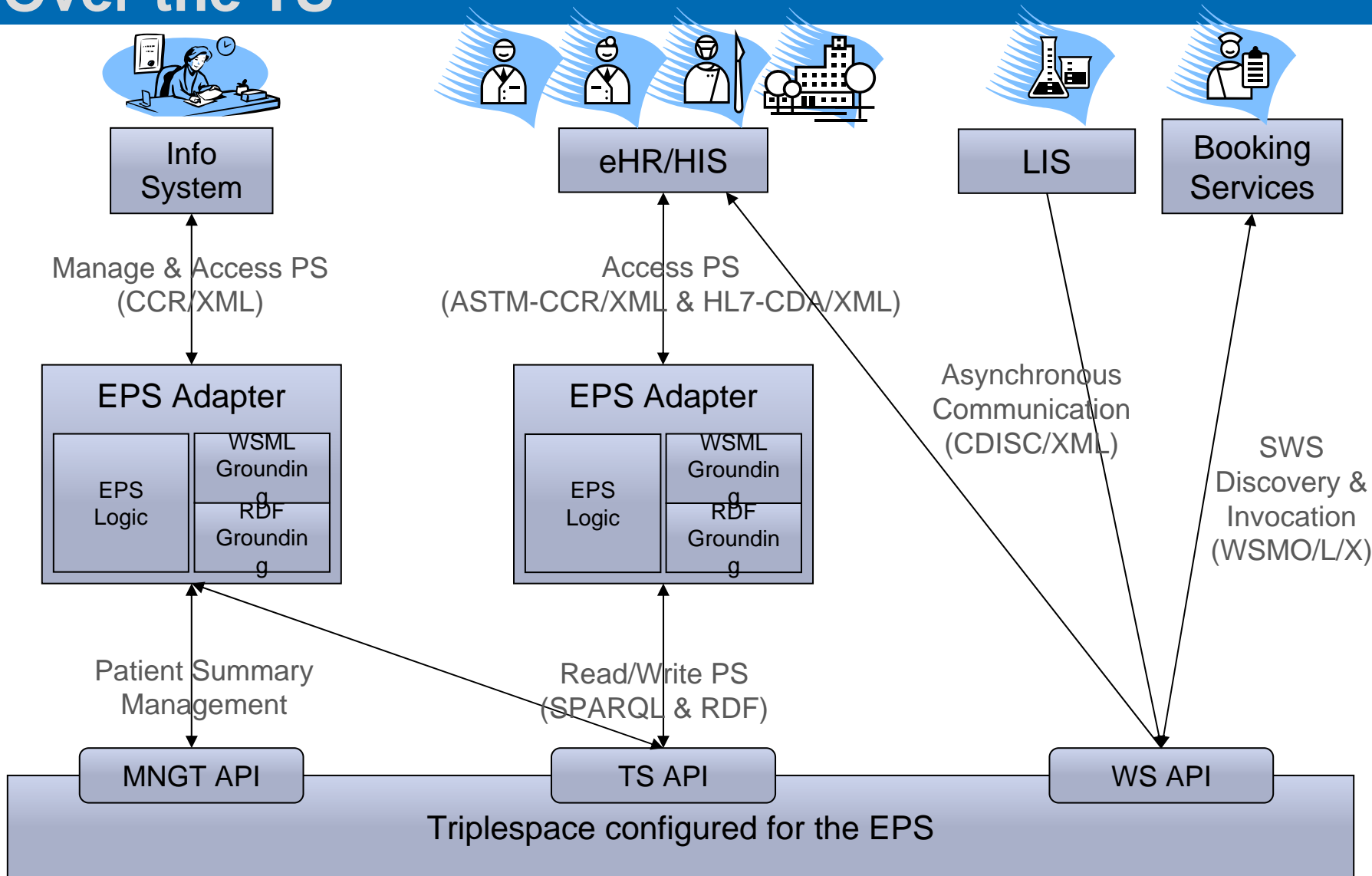
9 Jan 2008



- What we have done so far
  
- Envisioned General Architecture
  
- 1<sup>st</sup> Prototype Architecture
  - External components
  - Interactions
  - Numbers

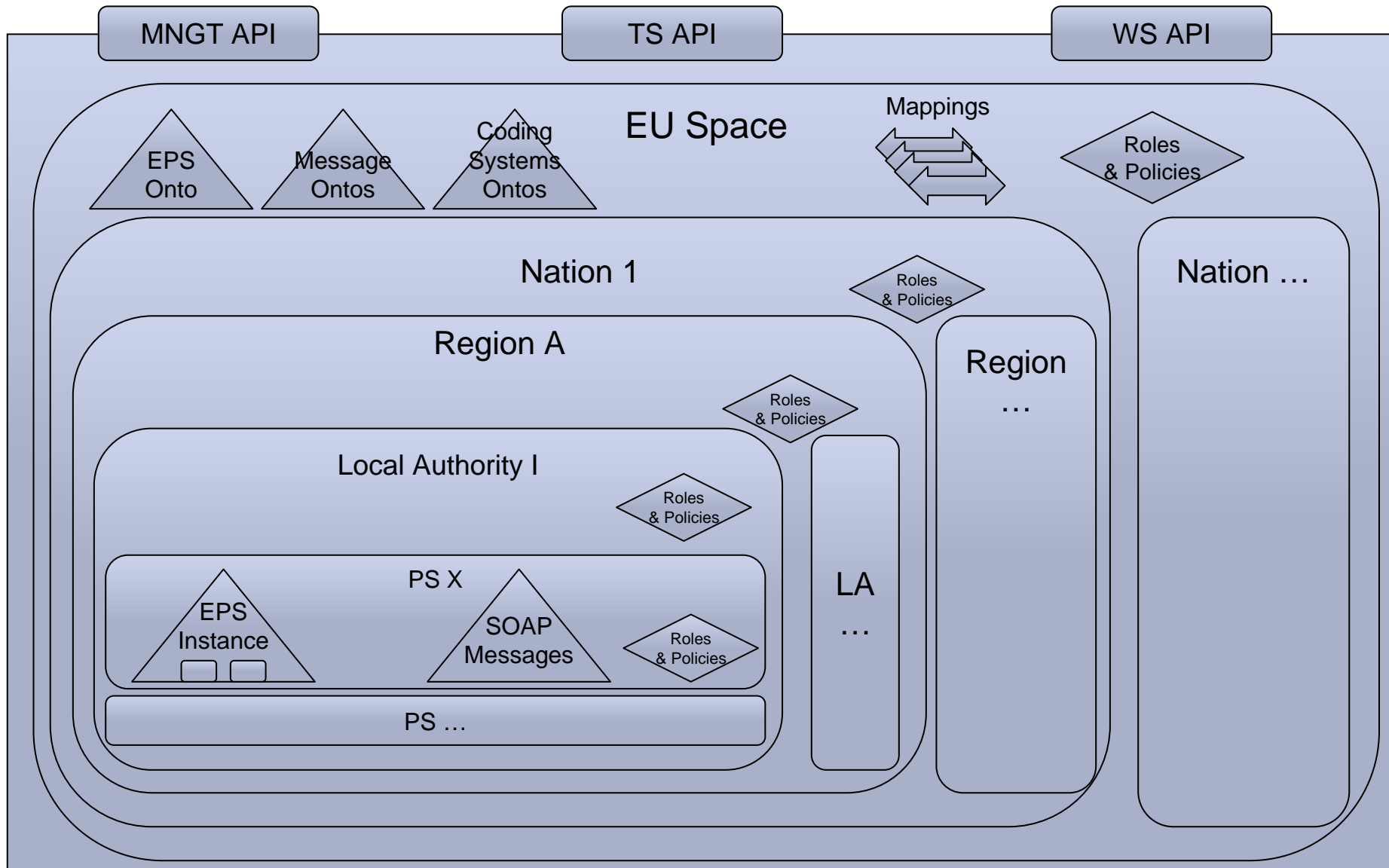
- **Ontologies**
  - **EPS Ontology**
    - Final version in WSML-Core, translatable in RDFS/RDF
    - Based on real-world standards
    - Models a full and realistic patient summary
  - **Coding systems ontologies**
    - ICD9, ICD10, Human Languages, LOINC, MeSH, MTH, NCI, RXNORM, UMLS
  - **eHealth 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



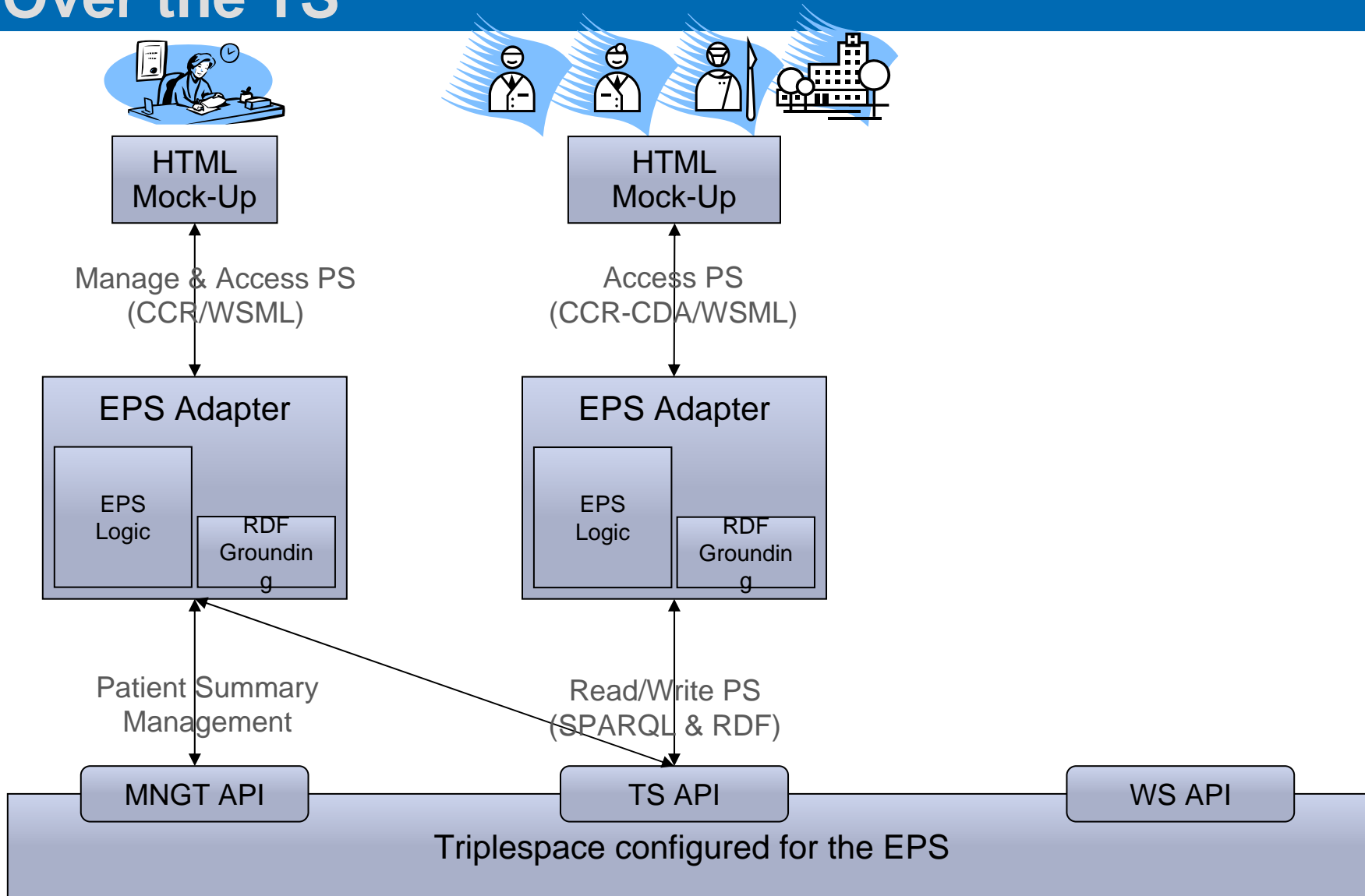
# Envisioned General Architecture

## Inside the TS - Hierarchy of spaces



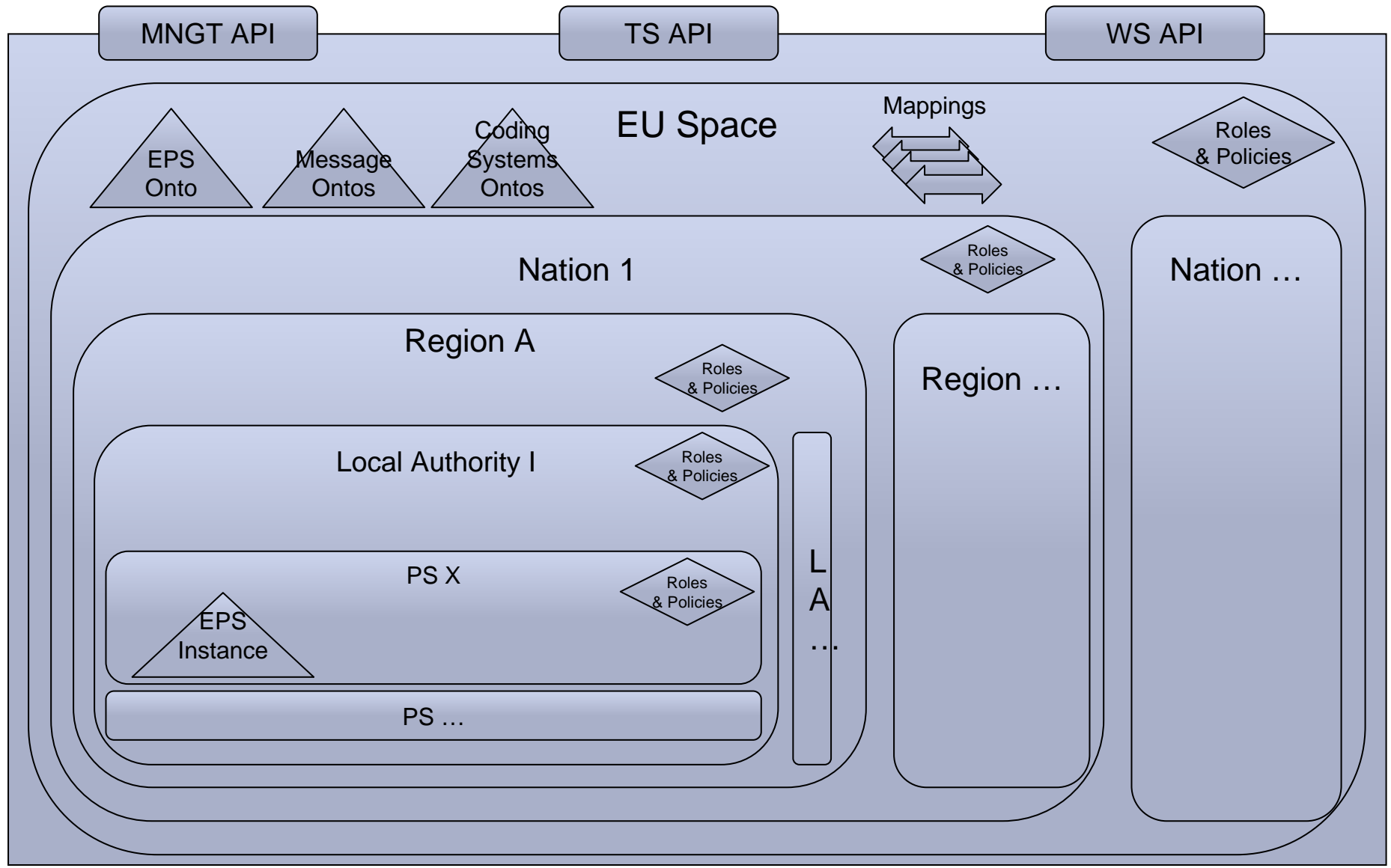
- Focus on demonstrating Triple Space capabilities
  - EPS Adapter
    - EPS logic for using MNGT API and TS API
    - RDF grounding component already available
  - HTML Mock-ups of external applications
    - Directly communicate using WSML messages
- WS API
  - WSMX Integration for SWS is planned after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

# 1<sup>st</sup> Prototype Architecture Over the TS



# 1<sup>st</sup> Prototype Architecture

## Inside the TS - Hierarchy of spaces





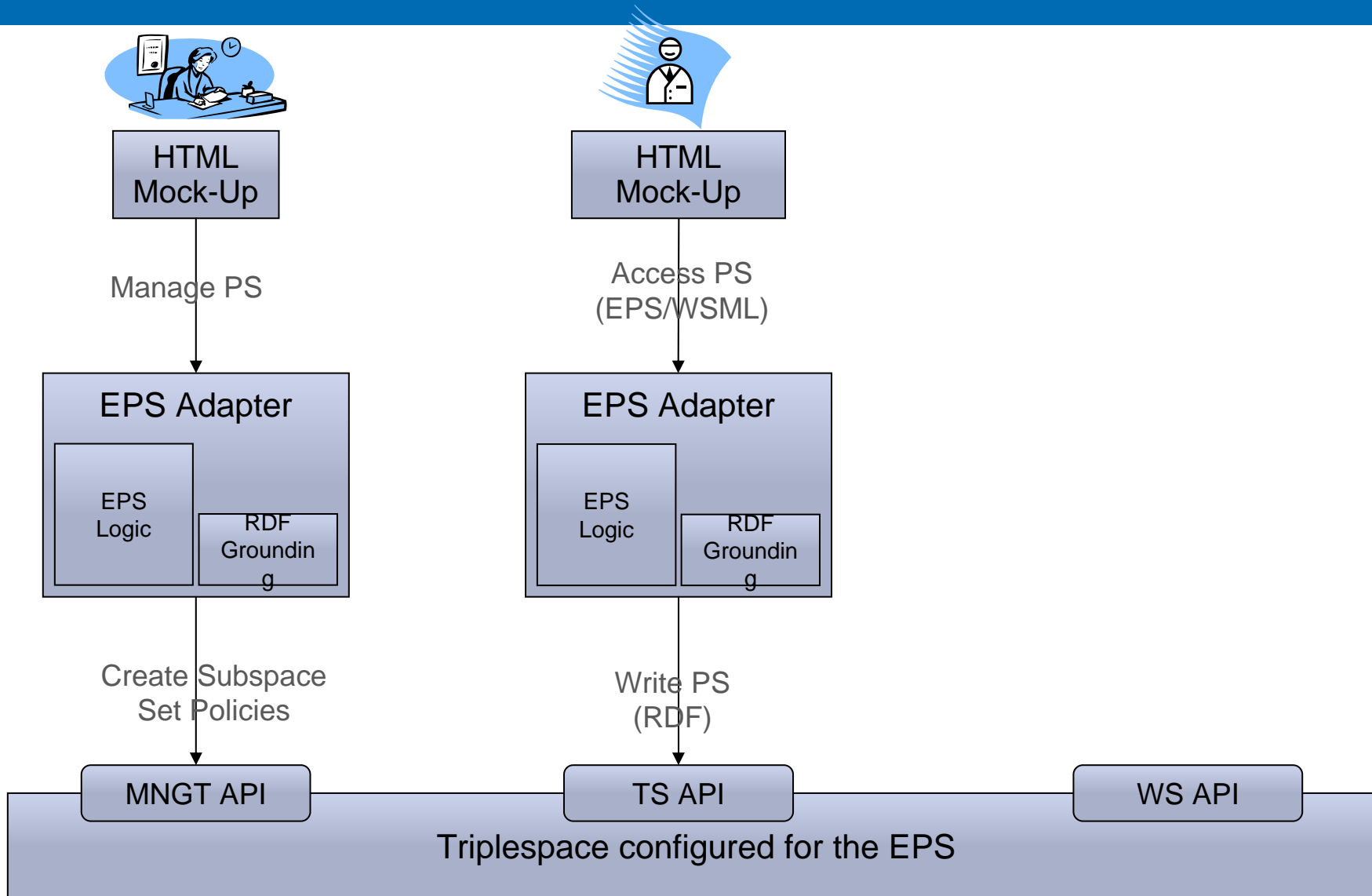
# Step 0: PS Initialization

(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

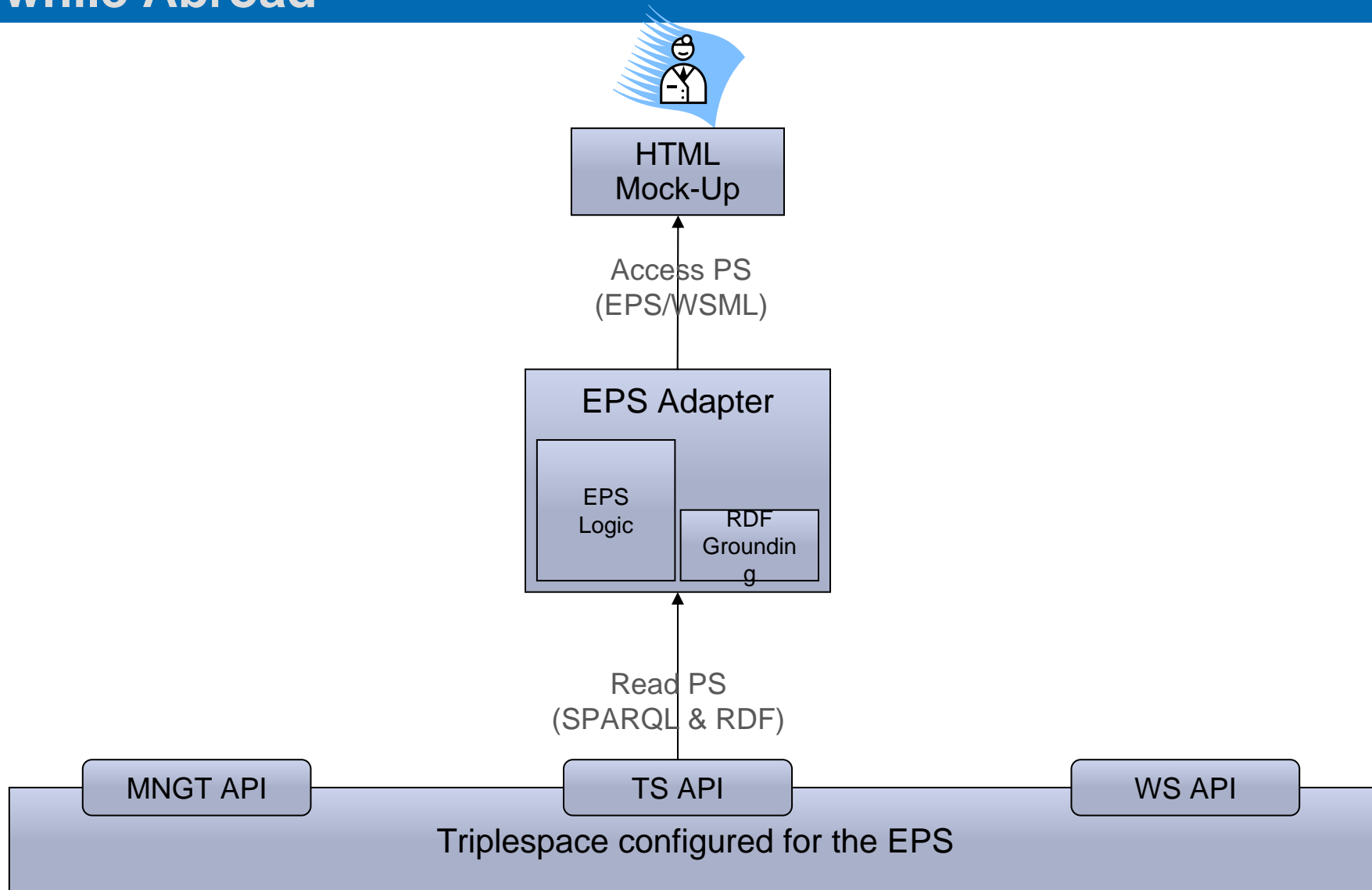


# Step 1: The Toothache and the visit to the dentist while Abroad



- 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



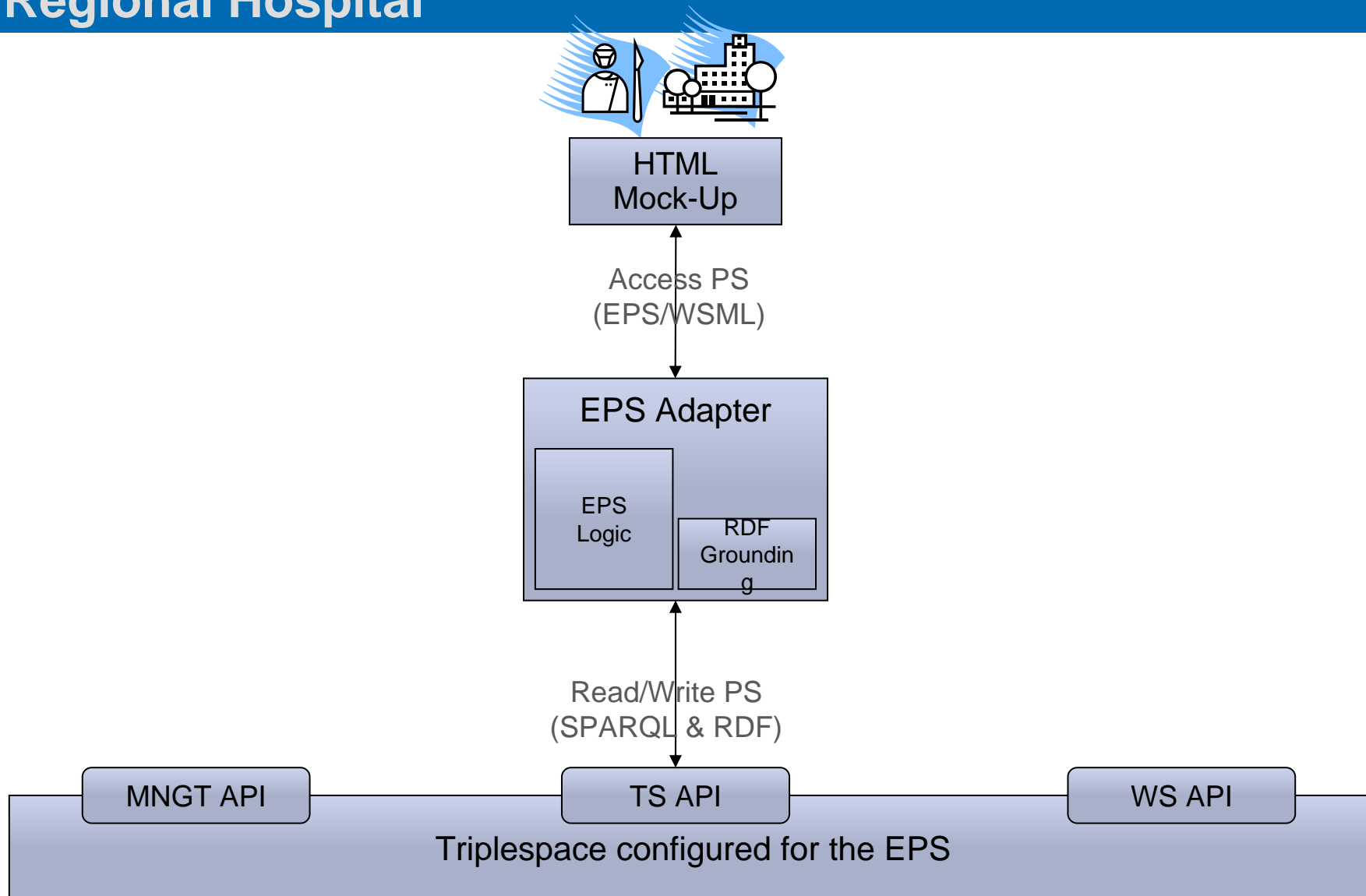
- This step uses SWS and WS asynch invocation
  - Not in the prototype

## 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



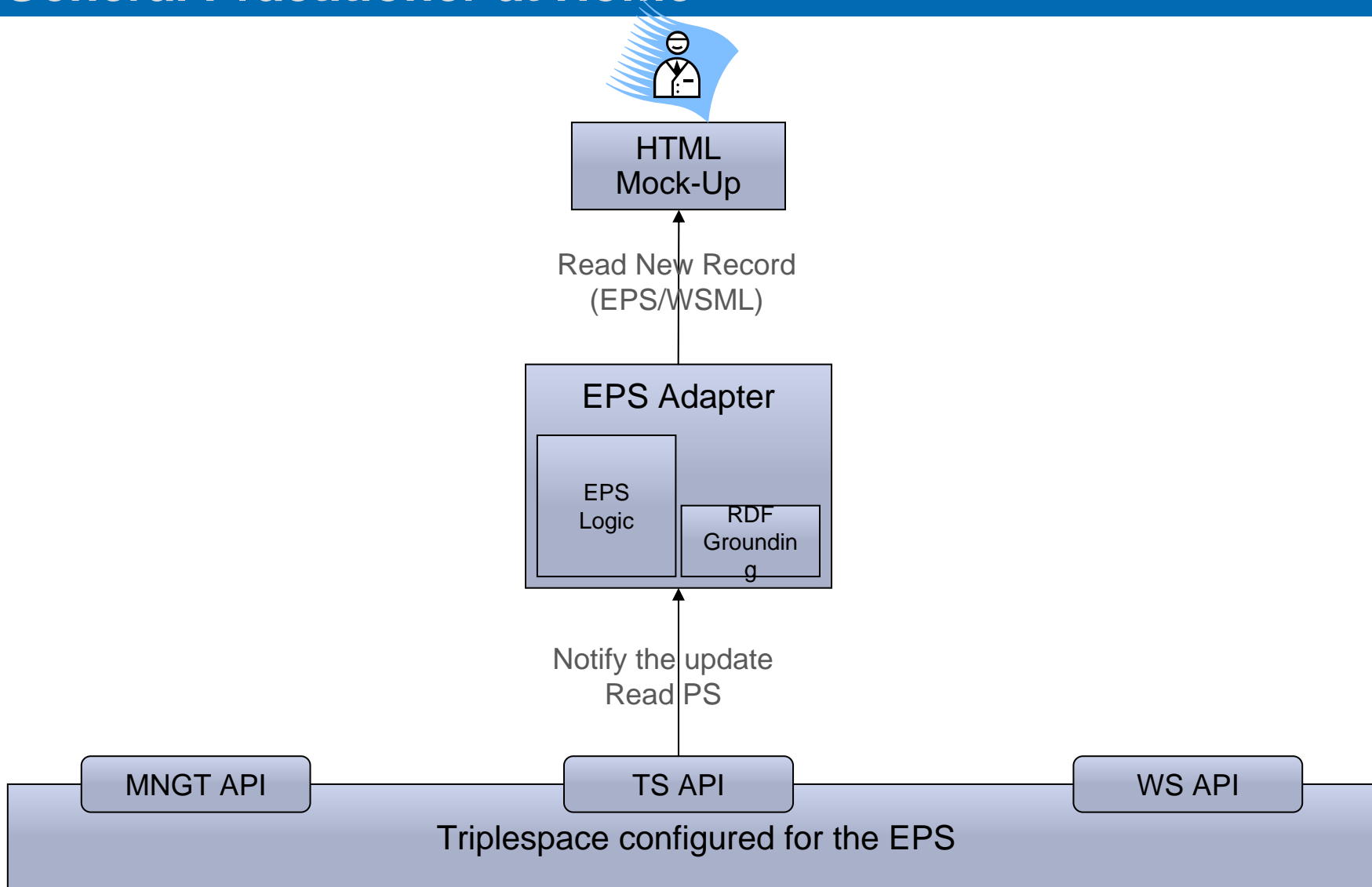
## Step 4: The Notification to the General Practitioner at Home



- 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]