REDESIGN OF THE INTERNATIONAL TIMETABLING PROCESS (TTR)

RailNetEurope

Redesign of the international Timetabling Process

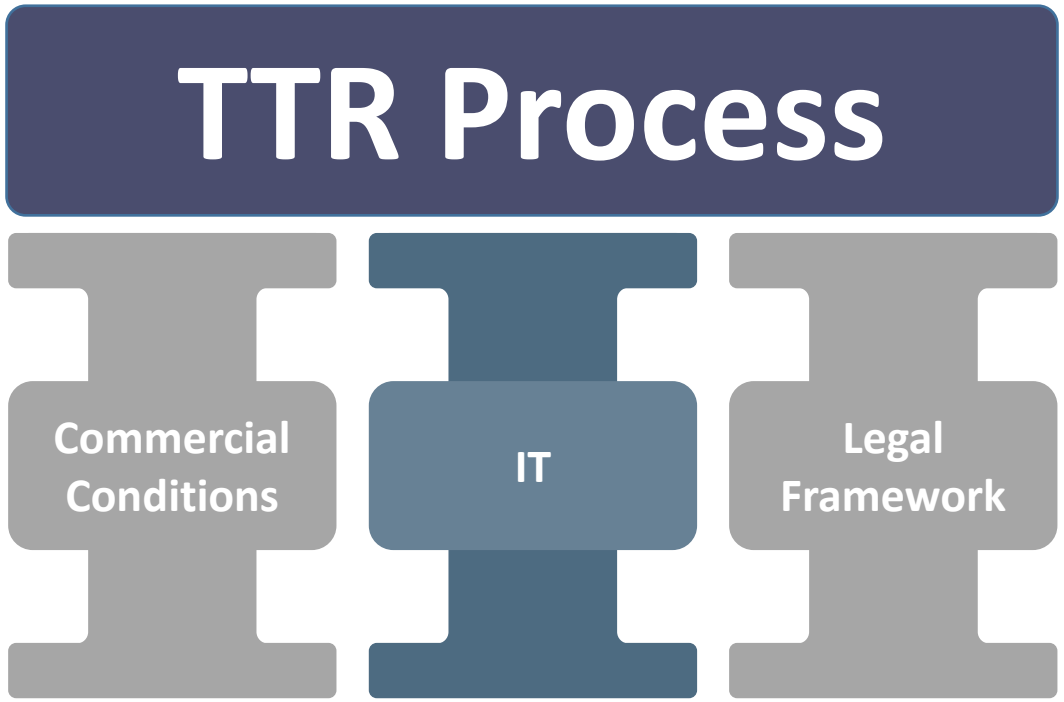
FORUM TRAIN EUROPE

Overall Presentation

supported by ERFA

TTR IT

Aims of the TTR IT Landscape

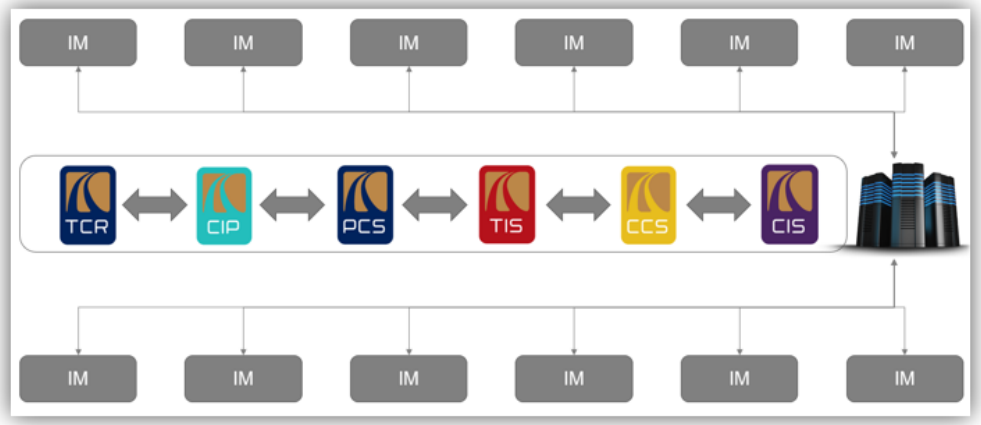


The TTR IT landscape aims to

- **raise the quality of information exchanged between all stakeholders,**
- **accelerate process steps by allowing for a certain extent of automation,**
- **and provide easy access to all stakeholders, either via interfaces or via web browsers.**

Introduction to Big Data

In addition to implementing specific communication standards, a main pillar of the TTR IT landscape is the use of common data components, using data collected and maintained in the RNE Big Data system.

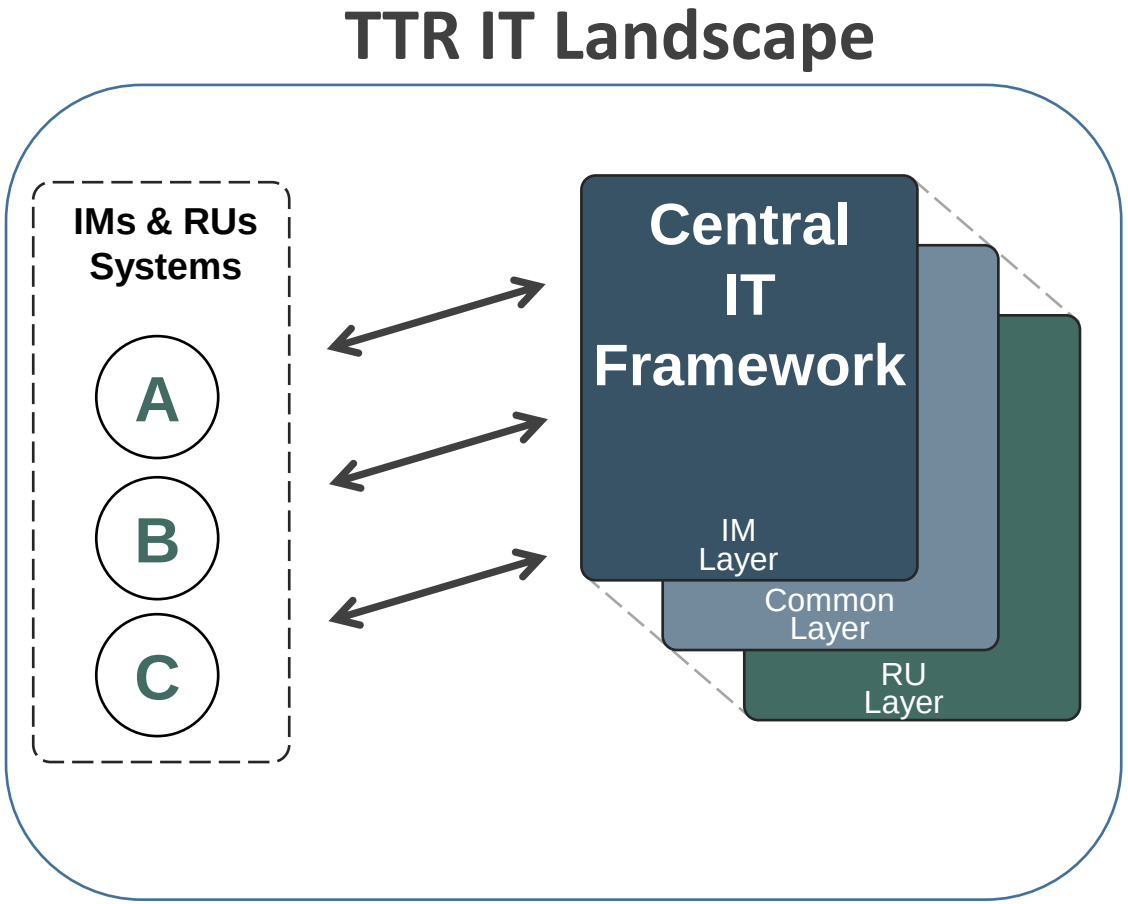


Basic IT Architecture

The future TTR IT landscape is split into **two main blocks**:

- The central IT framework, developed by RNE
- National and external systems, which need to communicate with the central IT framework

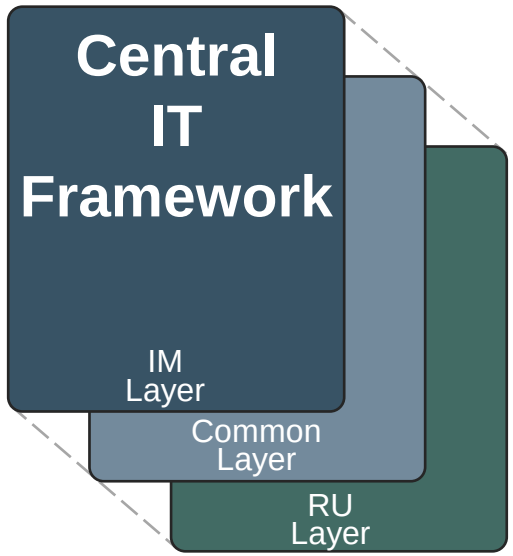
Communication between systems will be based on TAF/TAP TSI standards.



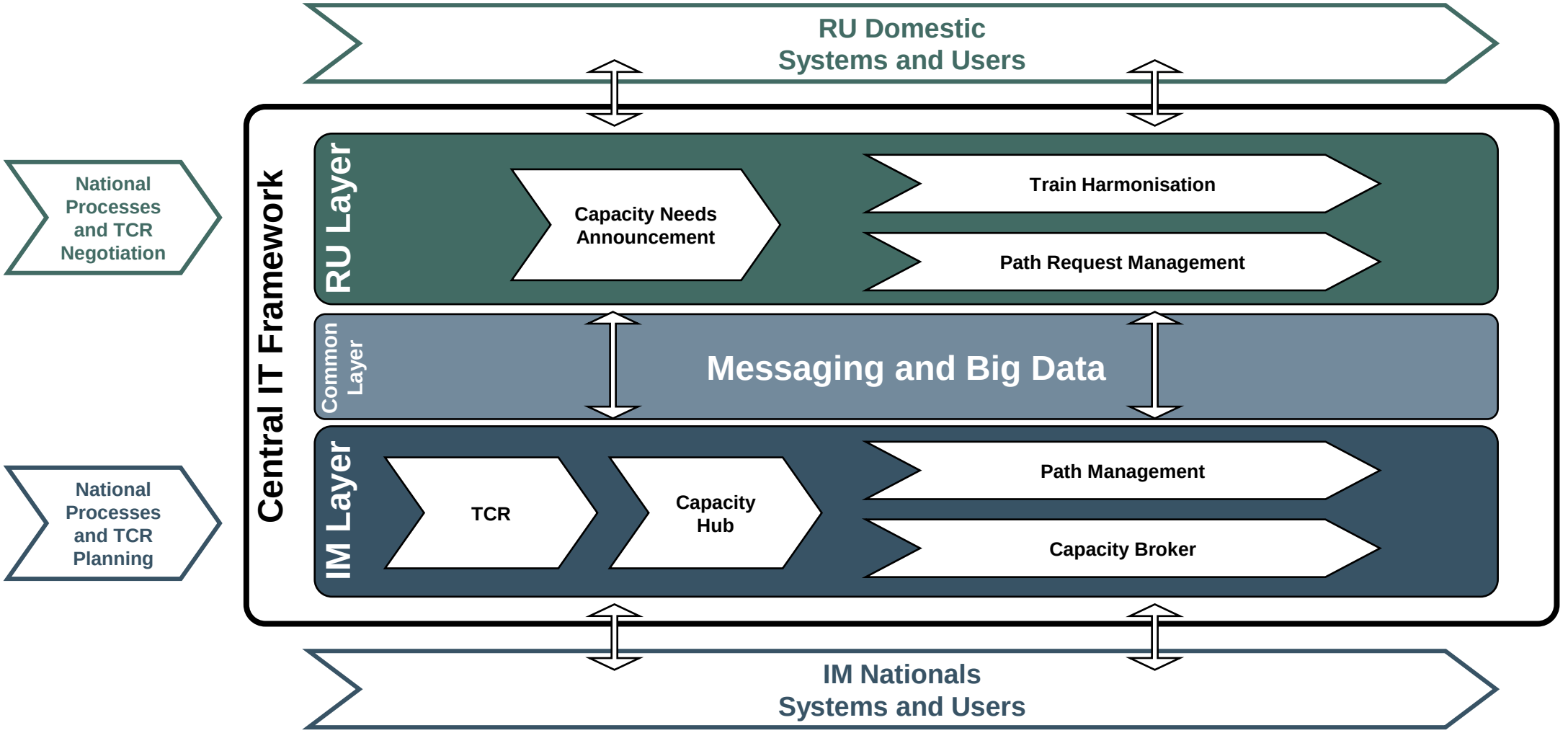
Layers of the Central IT Framework

In order to meet all business needs throughout the process, the central TTR IT Framework is set up in three layers:

- **RU layer**
- **IM layer**
- **Common layer**



Layers and Modules of the TTR IT Landscape



Modules of the RU Layer

Capacity Needs Announcements: Using this module, RUs will announce their capacity needs for the upcoming timetable period in advance to help IMs predict the traffic volume for accurate capacity modelling.

Train Harmonisation: This module will support information exchange on, and harmonisation of, train characteristics (load, weight, length, border handling etc.), train routes and train composition.

Path Request Management: Using the Path Request Management module, RUs will submit path requests to each IM, using the data harmonised in the Train Harmonisation module.

Modules of the IM Layer

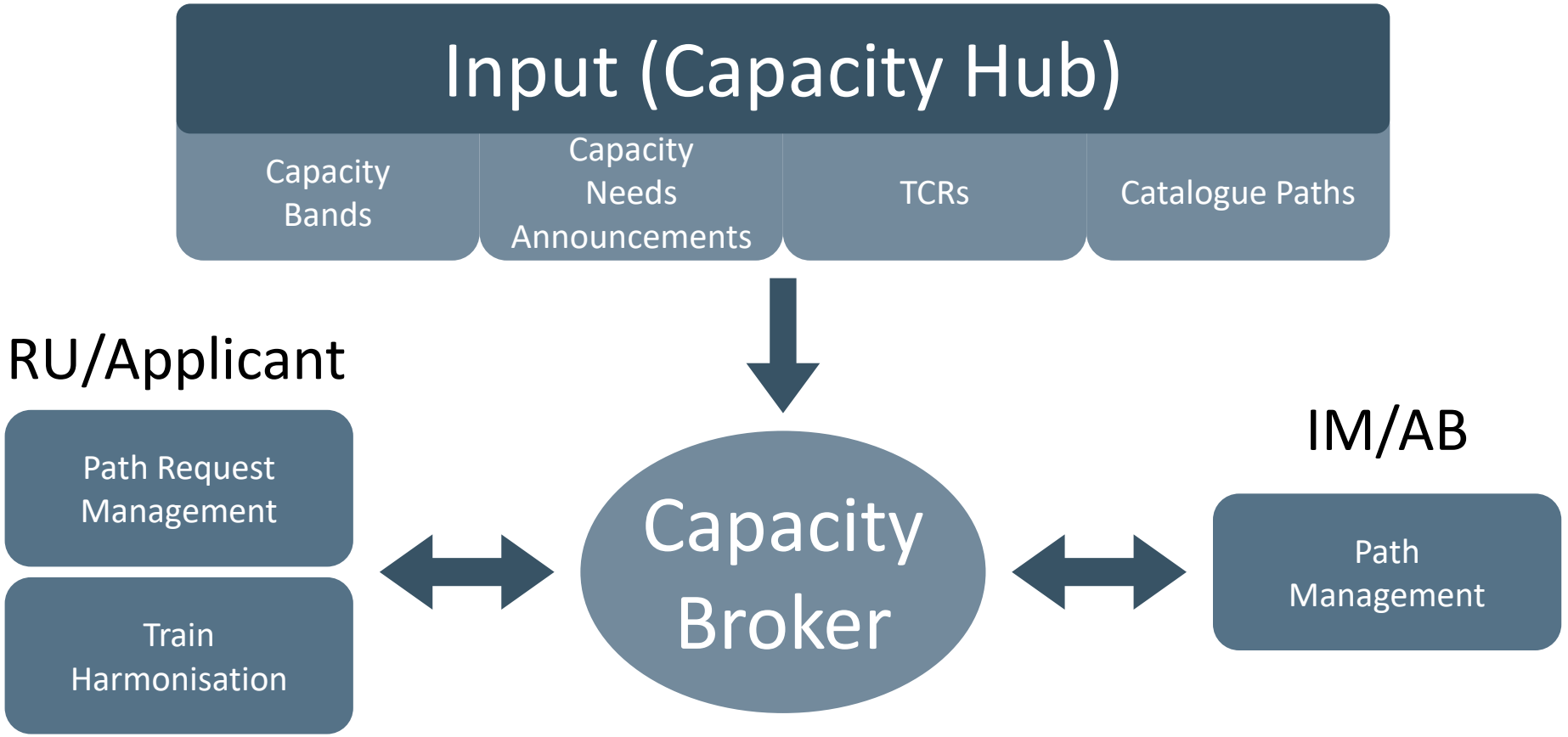
TCR (Temporary Capacity Restrictions): The TCR module collects all available information on planned TCRs in one dedicated space. This helps IMs to coordinate at international level and decrease the negative influence of TCRs on train operation.

Capacity Hub: The Capacity Hub module collects all data from the IMs/ABs and RUs and provides an overview of available capacity and TCRs in an early stage of planning.

Capacity Broker: By means of an algorithm, this module checks available capacity against the IMs'/ABs national systems, and distributes it according to RUs' requests.

Path Management: The Path Management module ensures that international path coordination is done in a harmonised format by all involved parties.

Connection of IM and RU Layers

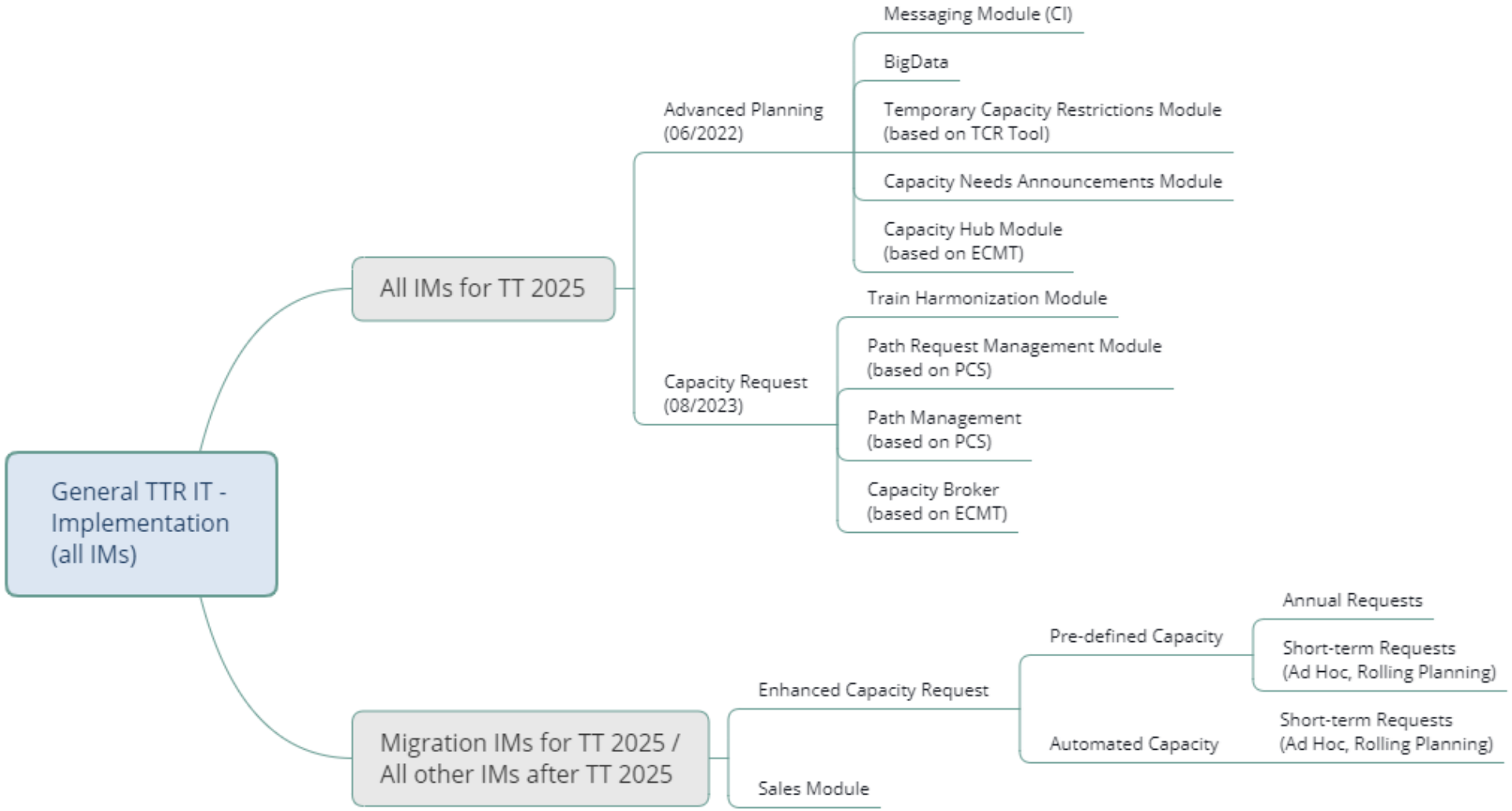


Common Layer: Messaging Module

Messaging Module:

- communication between RNE's central systems and the external systems of IMs and RUs
- router function for external systems of IMs and RUs to communicate with each other
- based on TAF/TAP TSI standards

IT Implementation



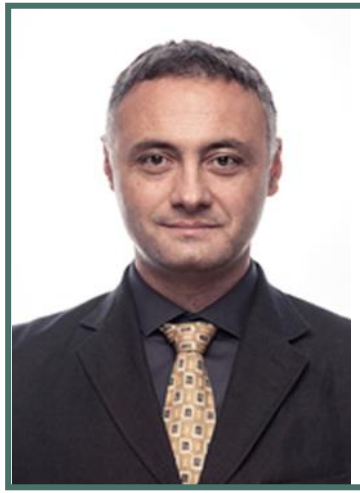
Useful Links (TTR IT)

- Summarised TTR IT landscape description:
  http://ttr.rne.eu/it/

- TTR IT documents:
  https://cms.rne.eu/ttr-documents/content/ttr-it-landscape

Contact TTR IT Landscape

If you have further questions regarding the TTR IT Landscape, please do not hesitate to contact the leader of project 'TTR IT Landscape', Mr Mario Toma.



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