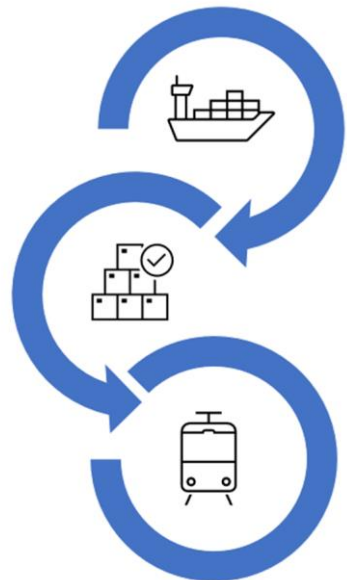


Optimization and automated management of logistics-port processes through the integration of systems

Renato Rosicarelli, Enterprise and Solution Architect



InterRail



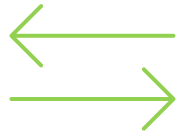
Context

The information flows of the railway port logistics processes are managed in heterogeneous ways by the various actors involved

Goal

Better programming, planning and management of operations relating to the port railway supply chain, helping to pursue an optimization of the logistic cycle of the various actors involved

Project Pillars



Once



Synchronization

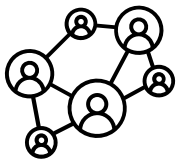


Monitoring

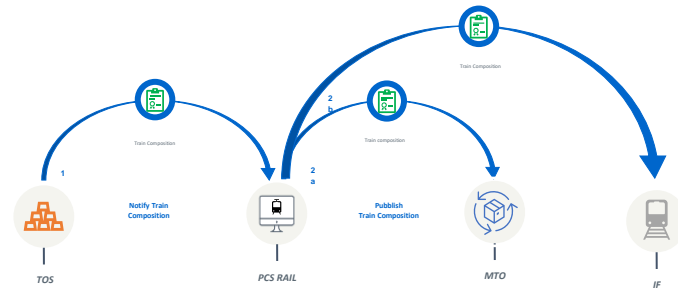


Sharing

Methodology



Involvement
Stakeholders



Ecosystem map



Sharing of analysis
documents

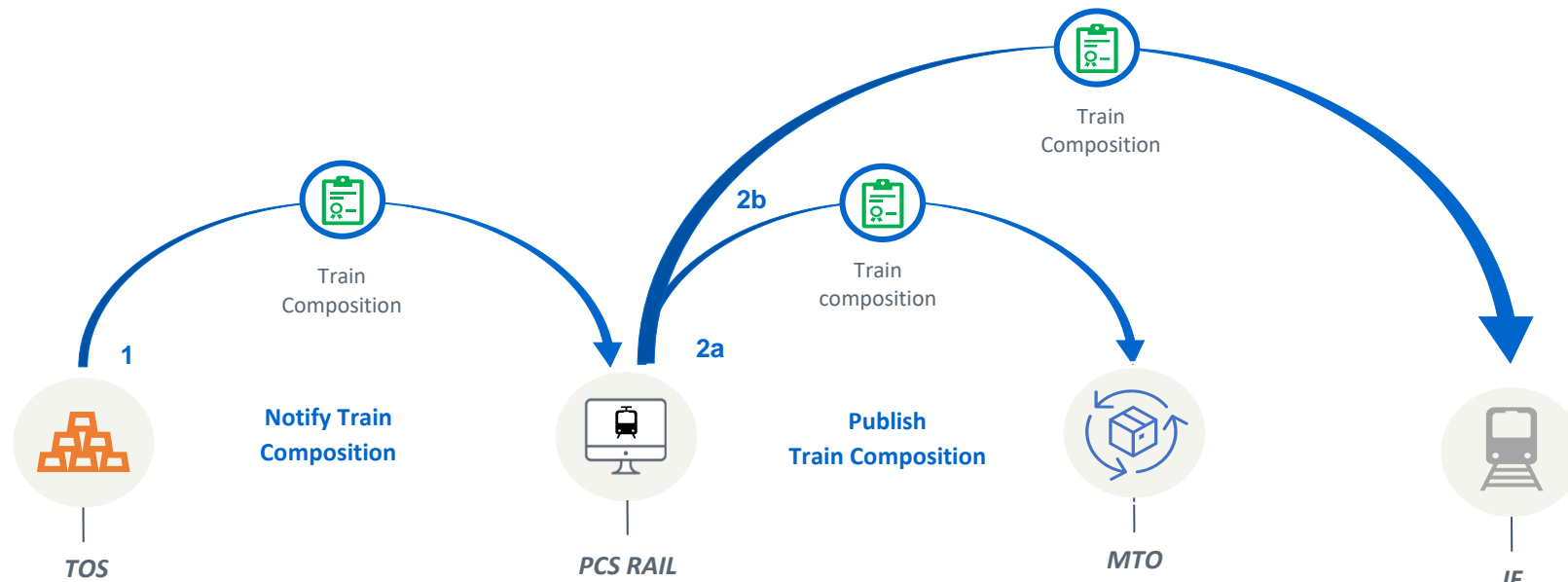


Design REST API

Actors and information flows

| Actors | Loading List | Train Composition | Distinta Treno | Train Timetable |
|-------------|---|---|---|--|
| MTO |  |  |  | |
| Railway Op. | |  |  | |
| Terminal |  |  |  |  |
| PCS RAIL | | | |  |

Artifacts of Train Composition



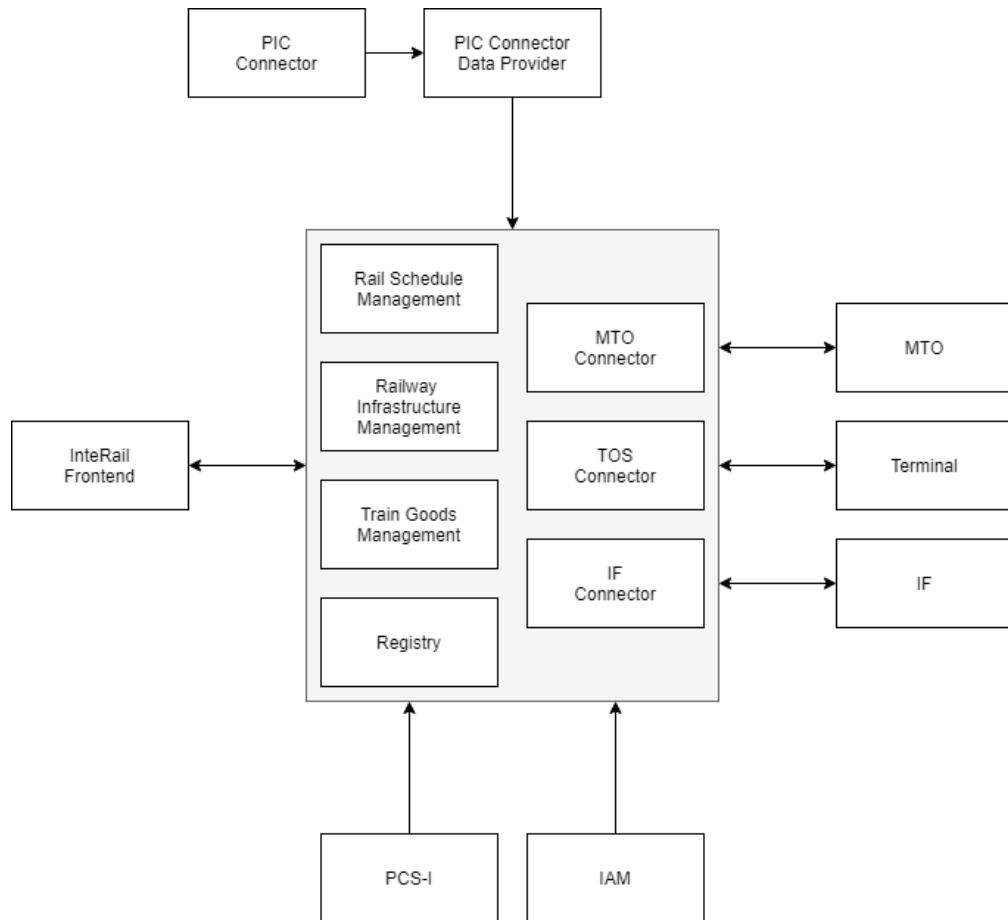
| Denominazione | Tipologia | Cardinalità | Semantica | Dominio |
|-------------------------|-----------|-------------|---|--|
| trainTripIdentification | String | 1 | Identificativo del viaggio treno, | Il TOS deve riportare il codice che l'MTO ha riportato nella loading list associata a questa Train composition |
| sender | Company | 1 | Terminal che invia il documento | - |
| recipient | Company | 1..n | MTO ed altri attori destinatari del documento | |
| referenceNumber | String | 1 | Numero del msg | |

```

{
  "trainTripIdentification": "trip_1",
  "sender": {
    "id": 1
  },
  "recipient": {
    "id": 2
  },
  "referenceNumber": "987",
  "versionNumber": "1",
  "trainNumber": "number_23",
  "itus": [
    {
      "ituNumber": "15",
      "ituType": "CN",
      "isoType": "iso_type",
      "destinationLocode": "destination_locode",
      "shipping_line": "shipping_line"
    },
    {
      "ituNumber": "16",
      "ituType": "CN",
      "destinationLocode": "destination_locode",
      "shipping_line": "shipping_line"
    }
  ],
  "empty": [
    {
      "ituType": "CN",
      "isoType": "iso_type",
      "booking": "booking_15",
      "destinationLocode": "destination_locode",
      "ituCompany": "itu_company"
    },
    {
      "ituType": "CN",
      "isoType": "iso_type",
      "booking": "booking_16",
      "destinationLocode": "destination_locode",
      "ituCompany": "itu_company"
    }
  ]
}

```

Technical Solution



- Hexagonal architecture
- RESTful APIs compliant with OpenAPI 3
- Integrated with PLN PCS
- IAM managed by the PLN infrastructure

Goals

- Analysis of information flows for the management of the processes of the last railway mile of the port
- Analysis of the integration with Agenzia delle Dogane e Monopoli (Italian Custom Agency) systems and automated gates

Activity

- Definition of the flows with the actors of the Last Mile
- Design of the integration with ADM systems and automated gates

Contact

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