Making platforms interoperable through the EFPF Data Spine

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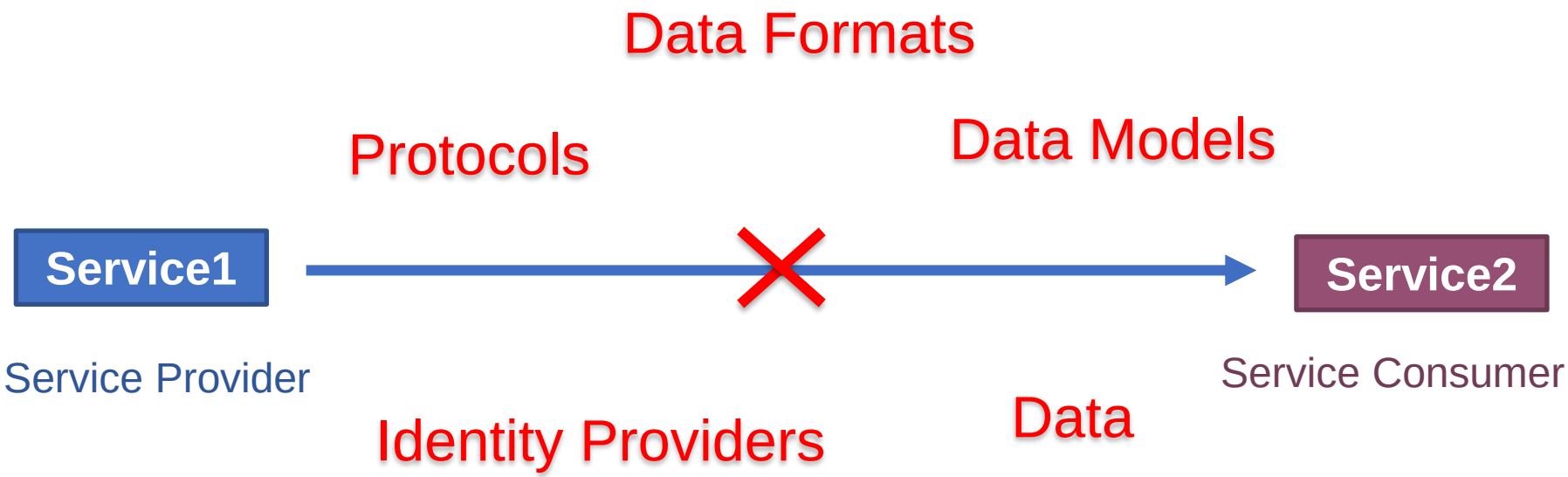
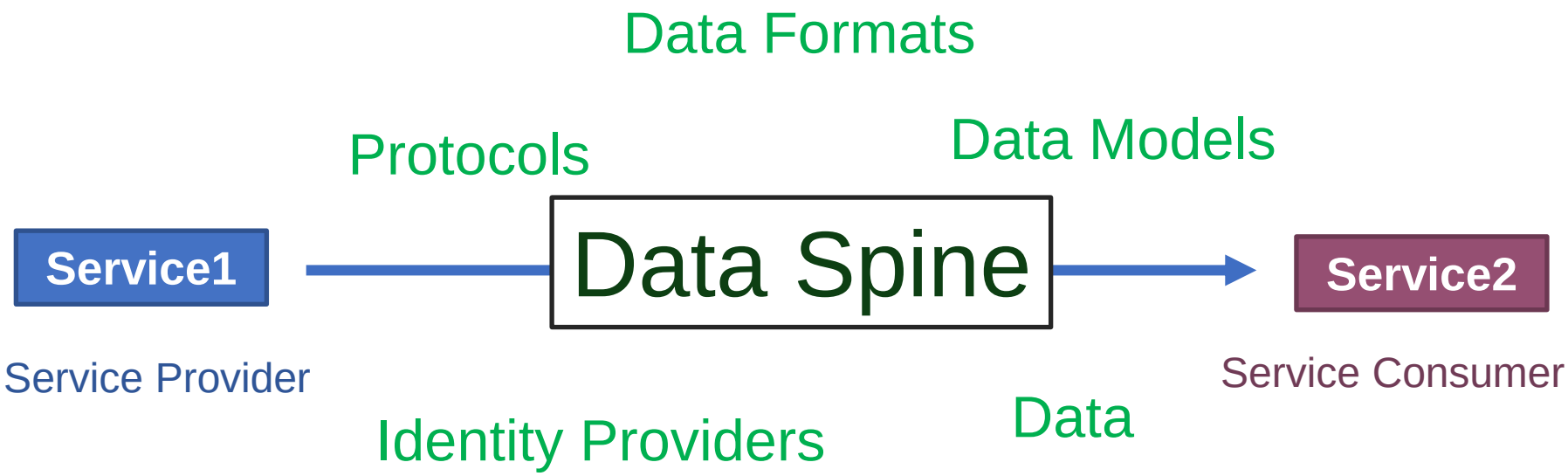
Why Data Spine?



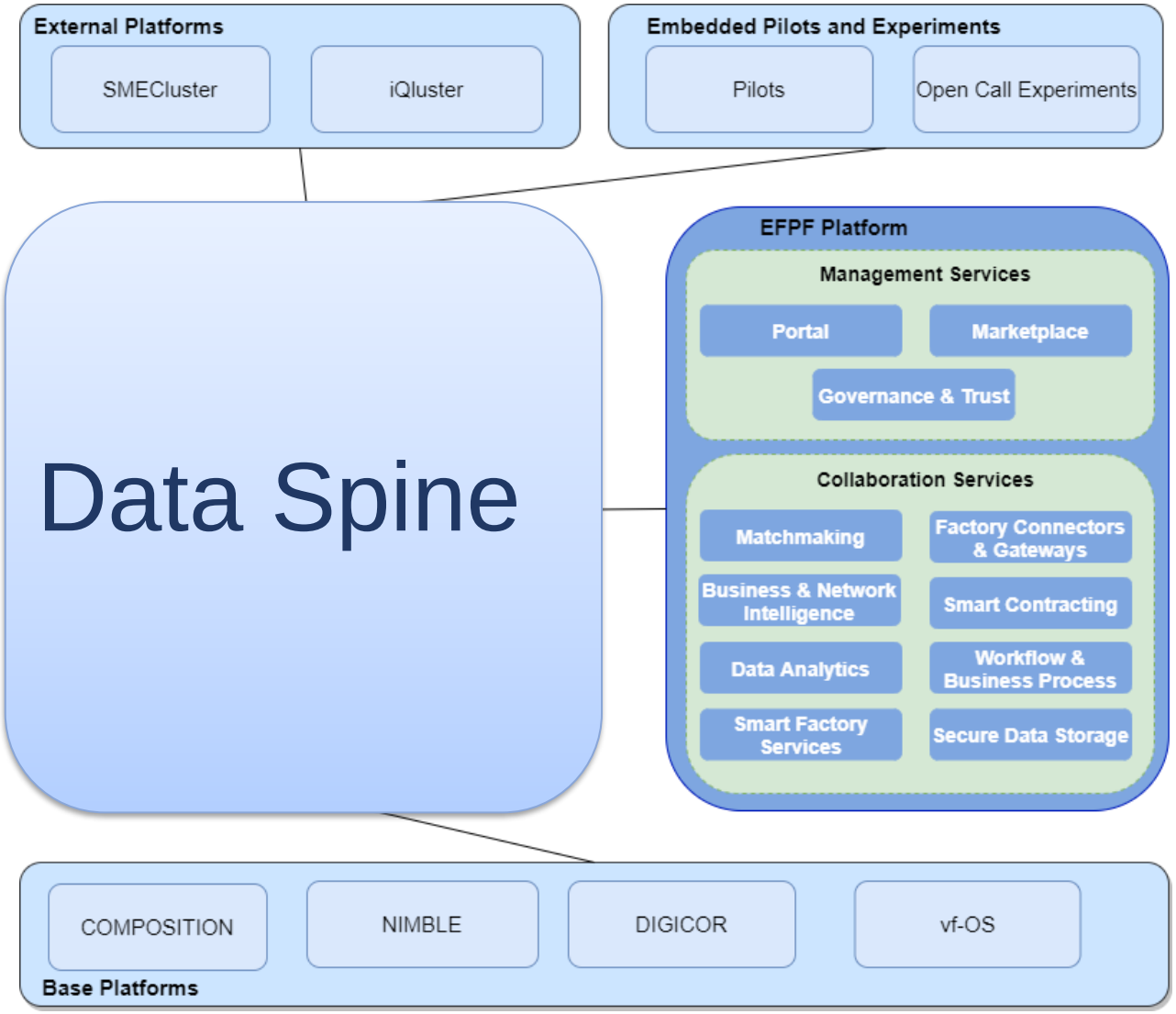
Why Data Spine?



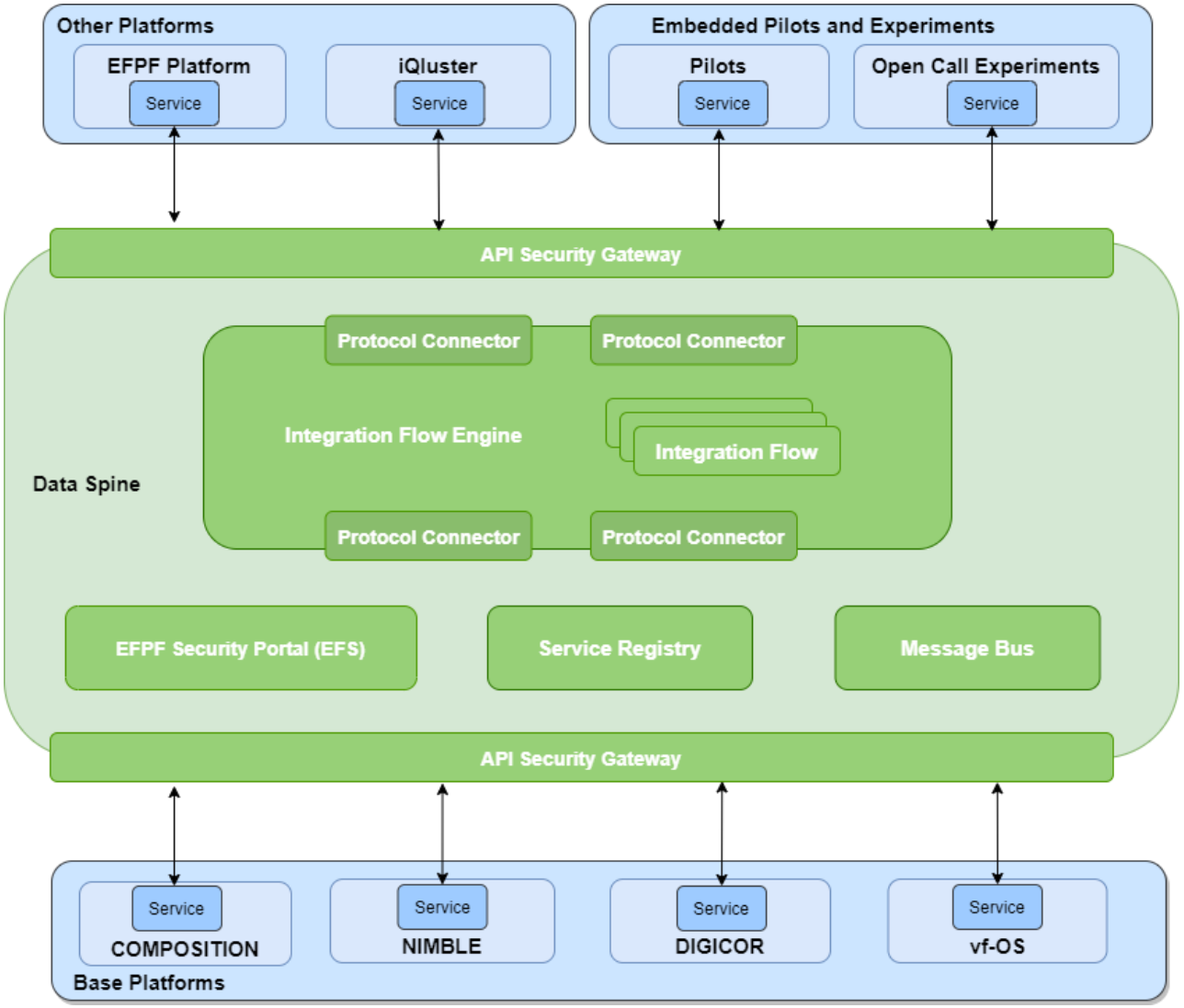
What is the Data Spine?

- It is an Integration and Communications Layer.
- Its main purpose is to **bridge protocol heterogeneity** and provide uniform access to services between base platforms and apps/tools.
- It supports **routing** of data (pub/sub and req/resp) and **transformation of data models**.
- It provides **security** and identity & access management (e.g. SSO) facilities.

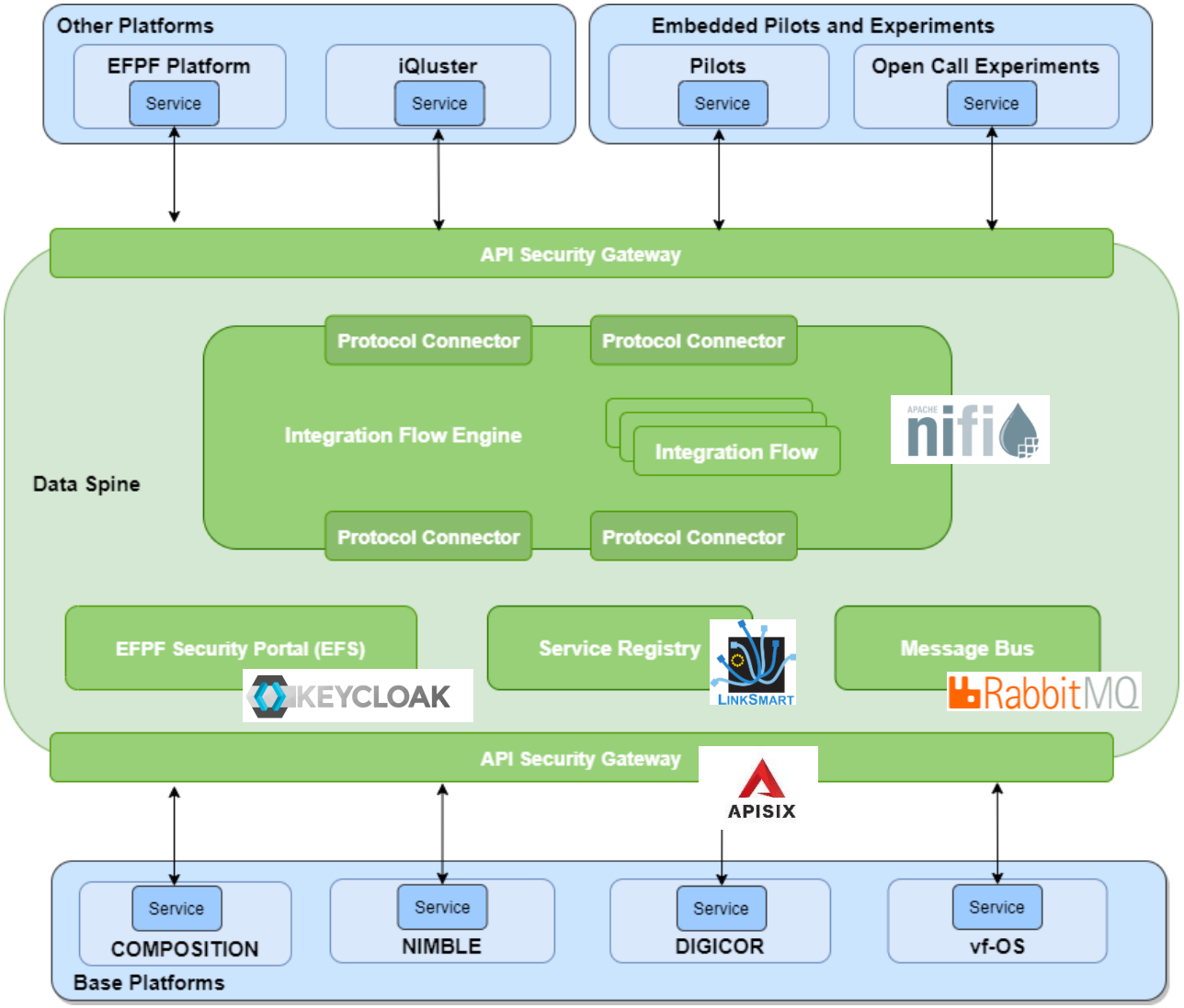
EFPF Ecosystem Architecture



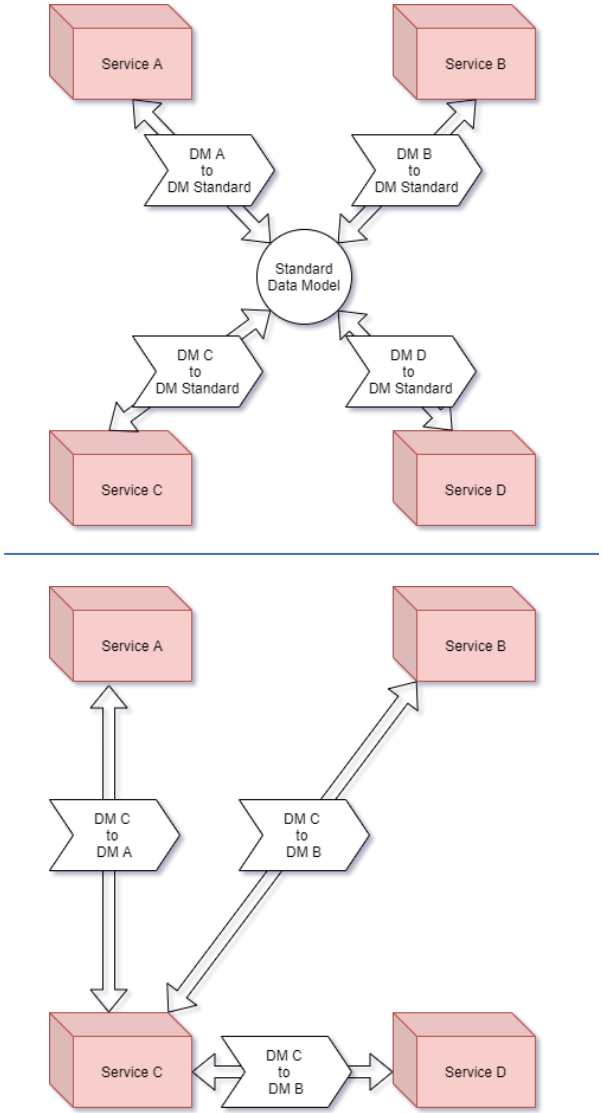
EFPF Ecosystem Architecture



Realisation of Interoperable Data Spine



Achieving Data Model Interoperability

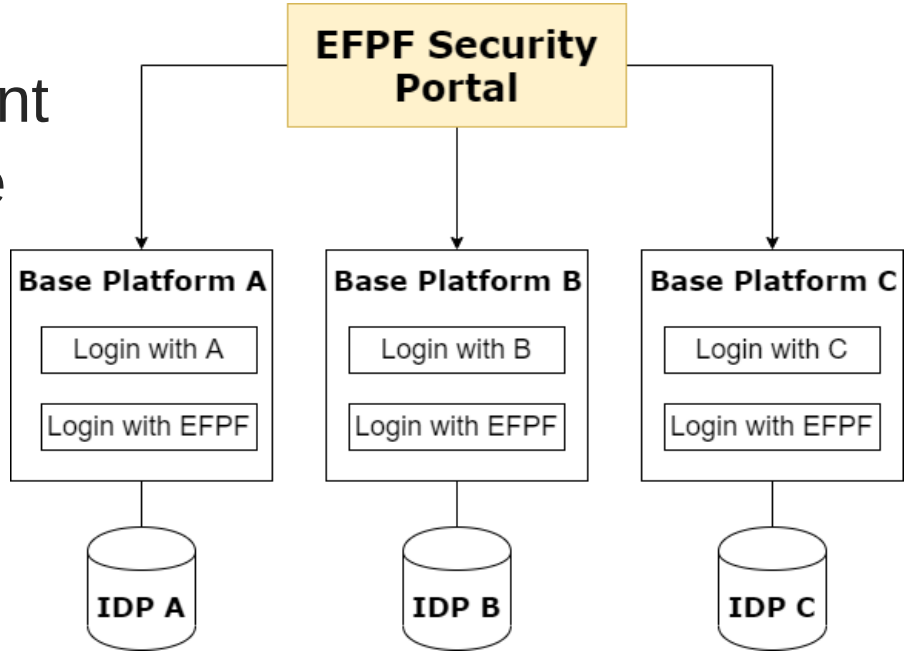


- One-to-one translation approach used:
  - Each custom data model is translated to a standard data model (e.g. OPC-UA, UBL, OGC SensorThings) using one of the data model transformation tools.
  - In case one data model changes, just one transformation tool has to be changed (w.r.t. one-to-many translation approach)
- Tools considered for transforming the data models:
  - NiFi processors [Jolt, ExcScript, XSLT, ...]
  - Ad-hoc microservices

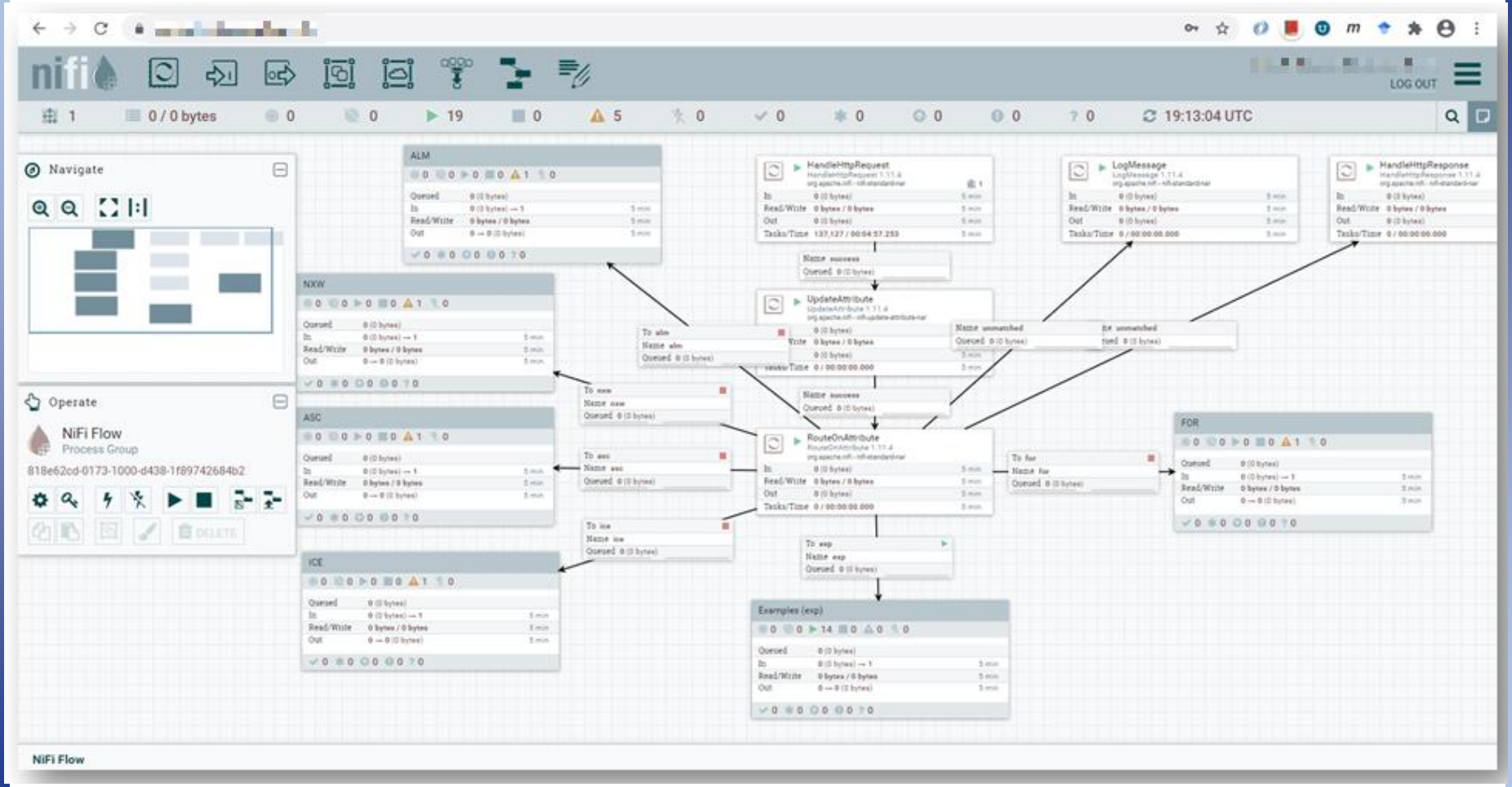
EFPF Security Components

- API Security Gateway
  - Policy Enforcement Point

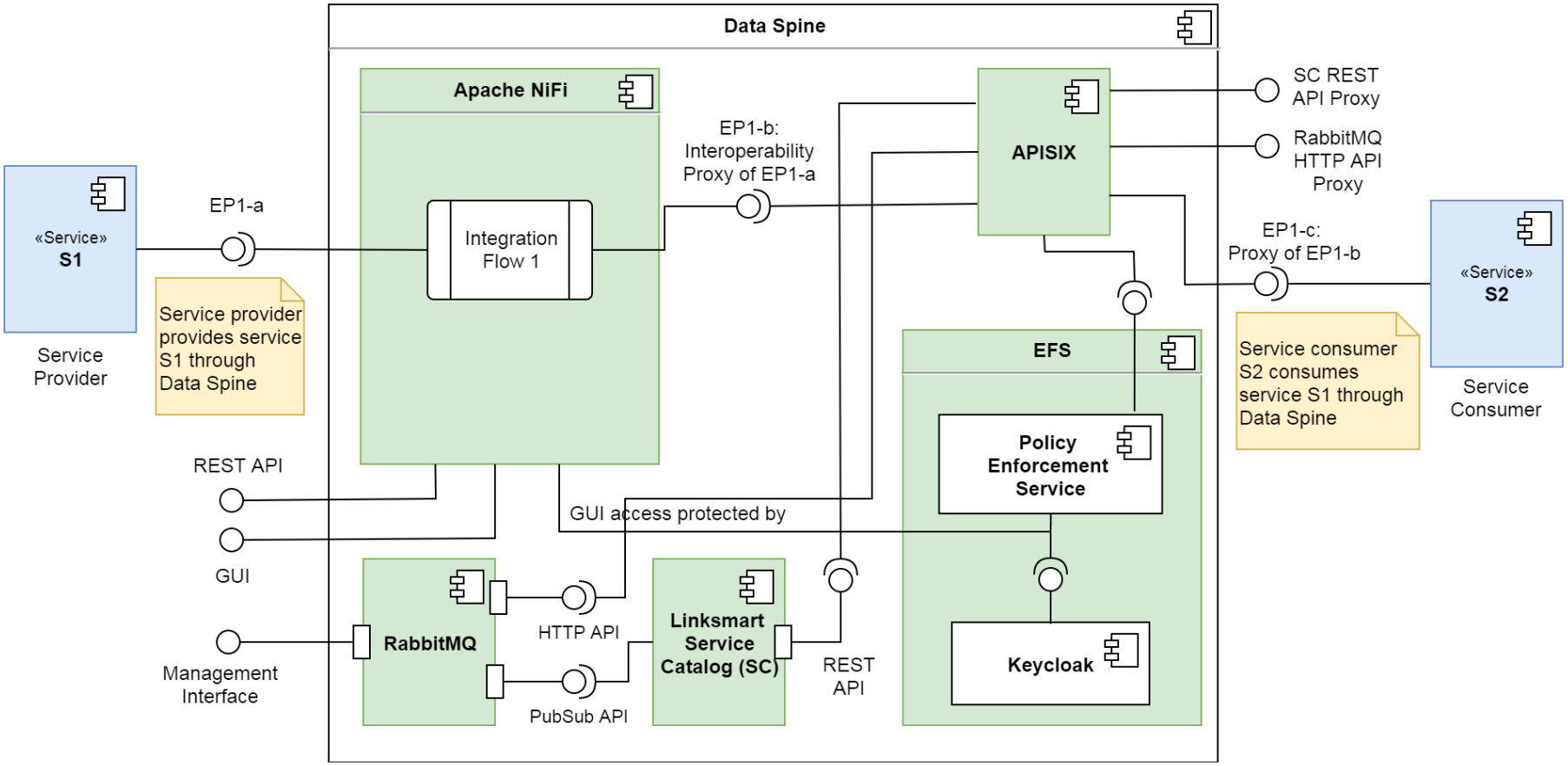
- EFPF Security Portal (EFS)
  - SSO
  - User & Policy Management
  - Token Translation Service
  - Policy Enforcement Service



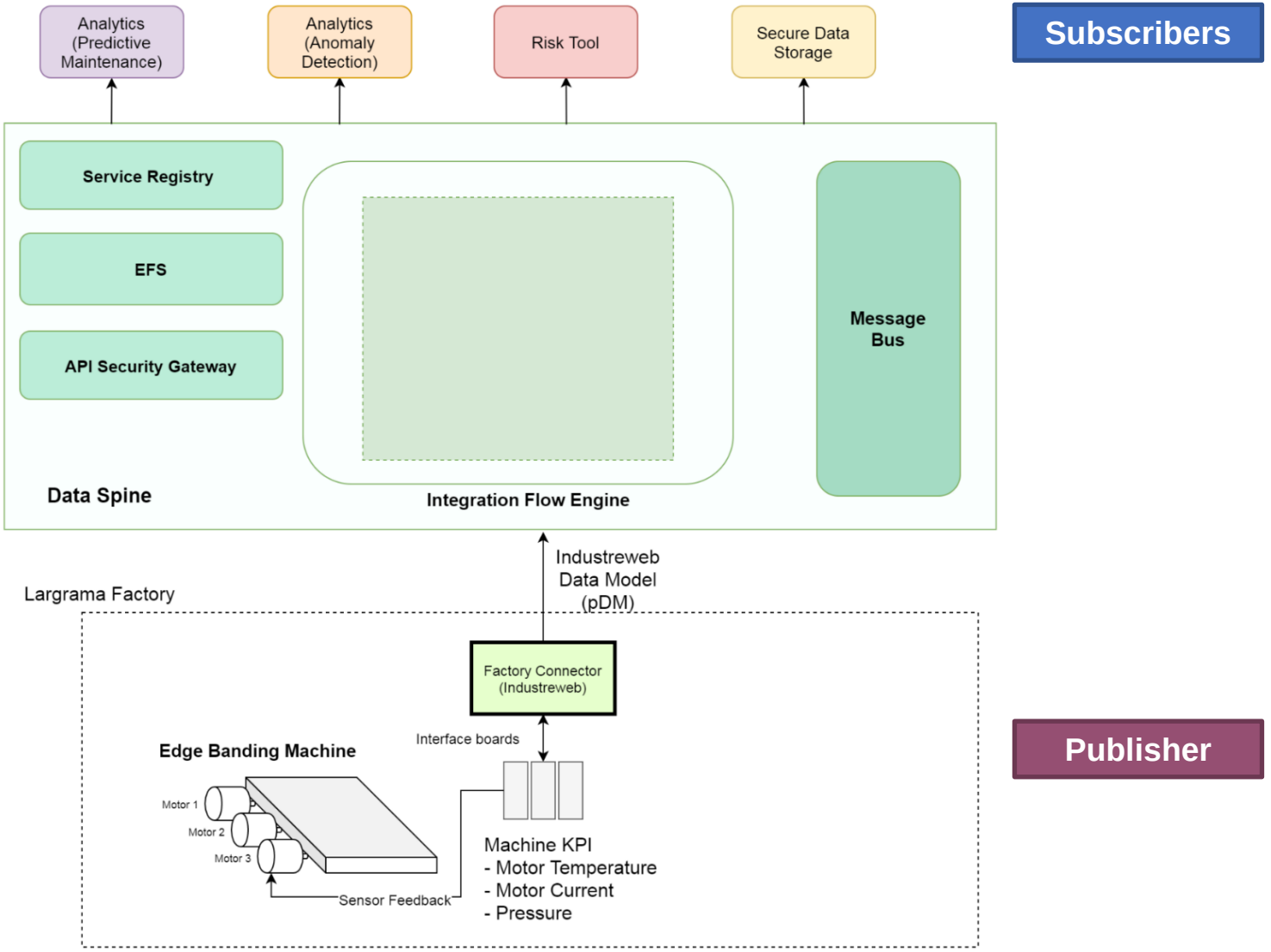
Integration Flow Engine (NiFi)



Data Spine Components' Interaction

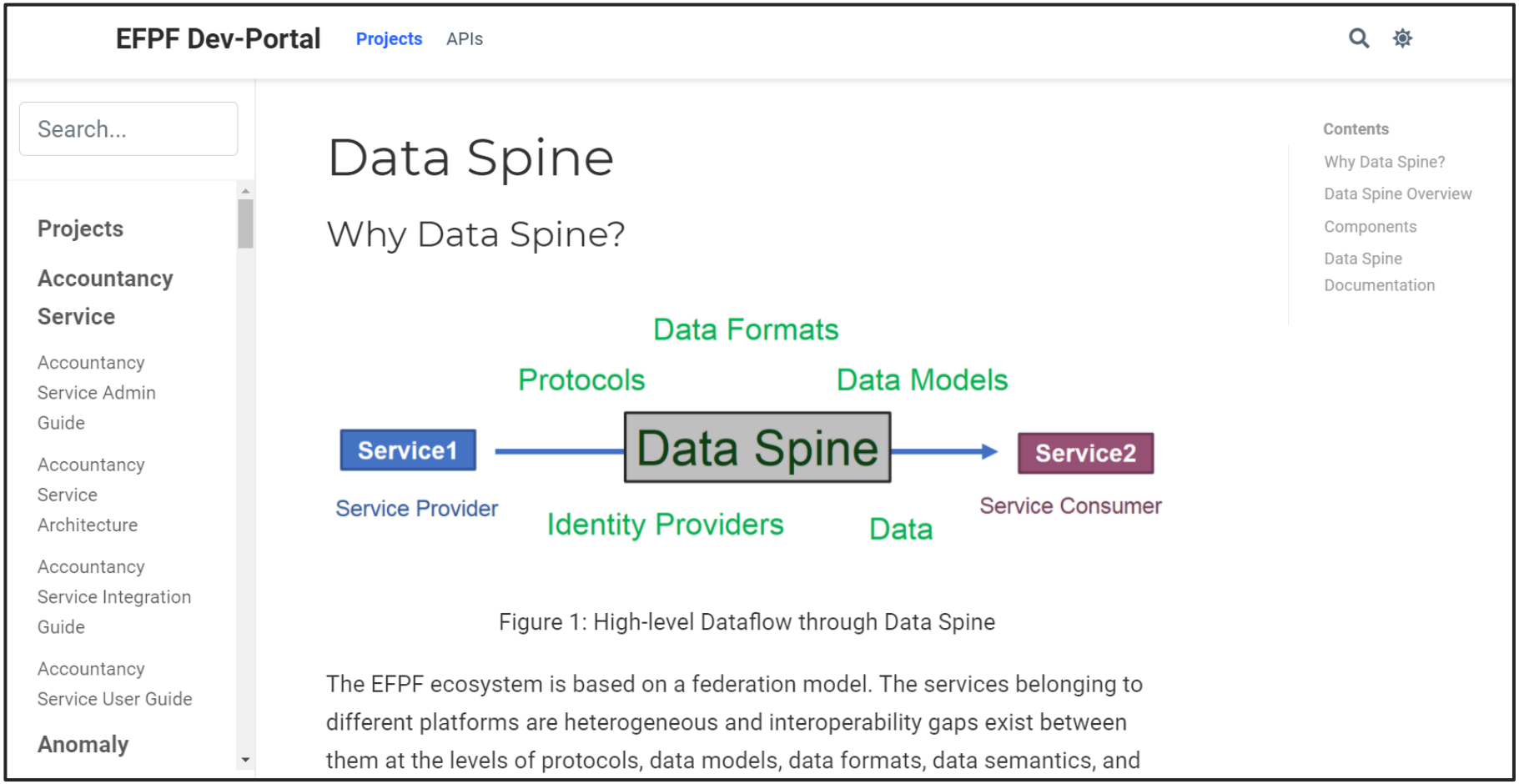


Example: Predictive Maintenance



EFPF Documentation Portal

Available from EFPF Portal



Thank you!

Any questions?

How to get in touch with us:

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Email: infoOpenCall@efpf.org