UNIKASSEL VERSITÄT

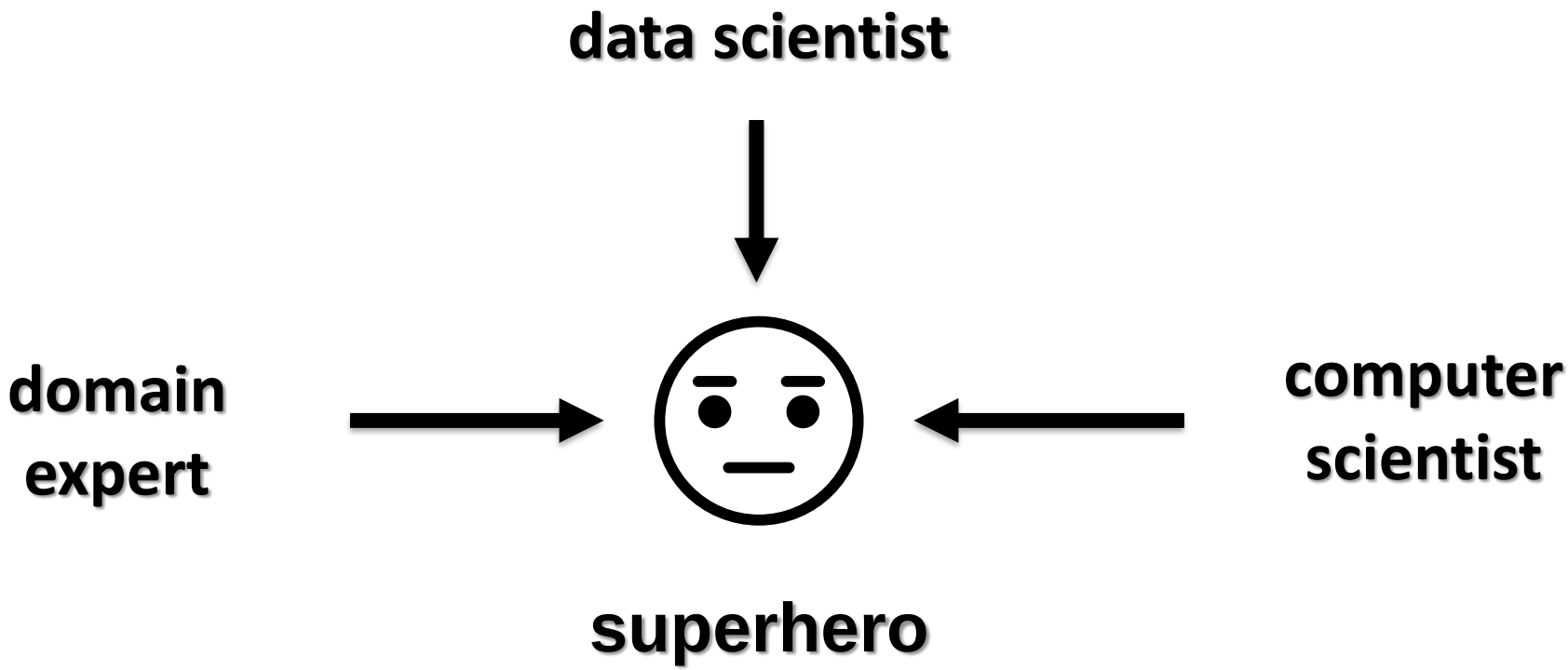
SOFTWARE ENGINEERING
UNIVERSITÄT KASSEL

Flow Studio
-
Microservices 2019

Software Engineering Research Group
Universität Kassel

Marcel Hahn
hahn@uni-kassel.de

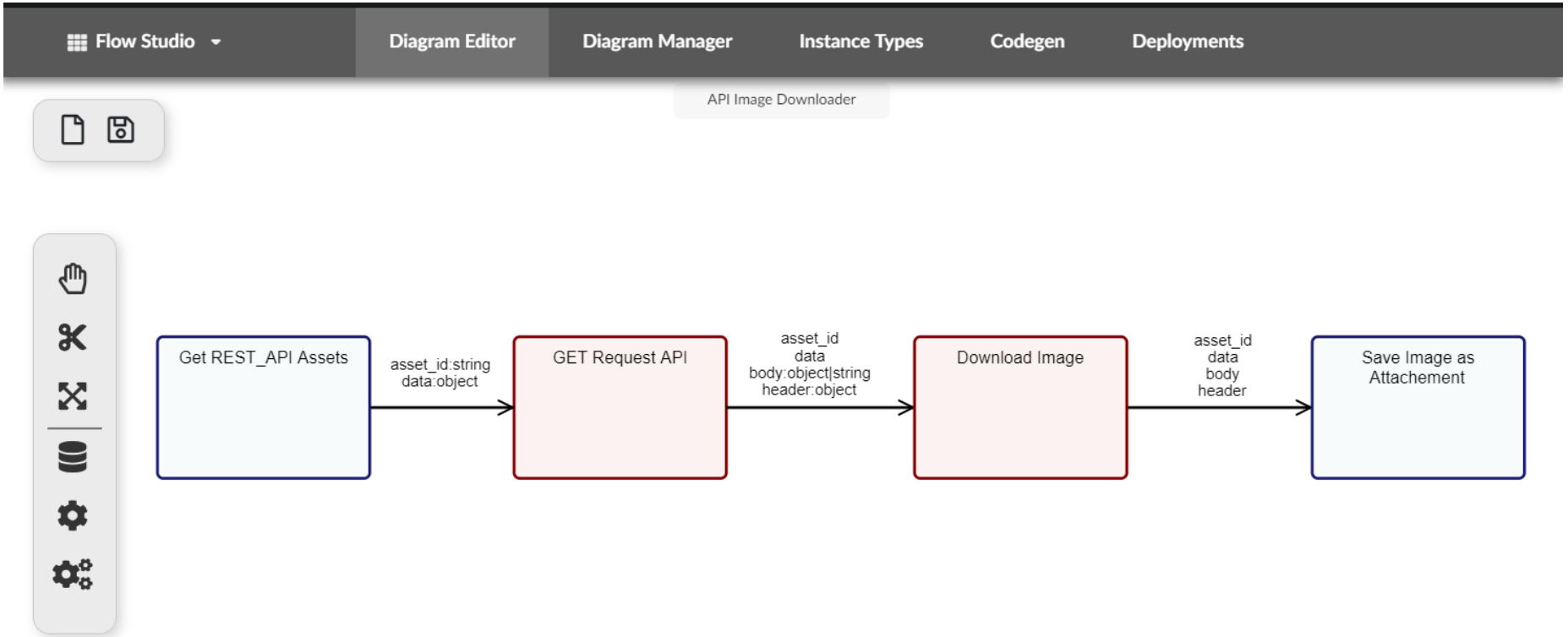
Need for special experts



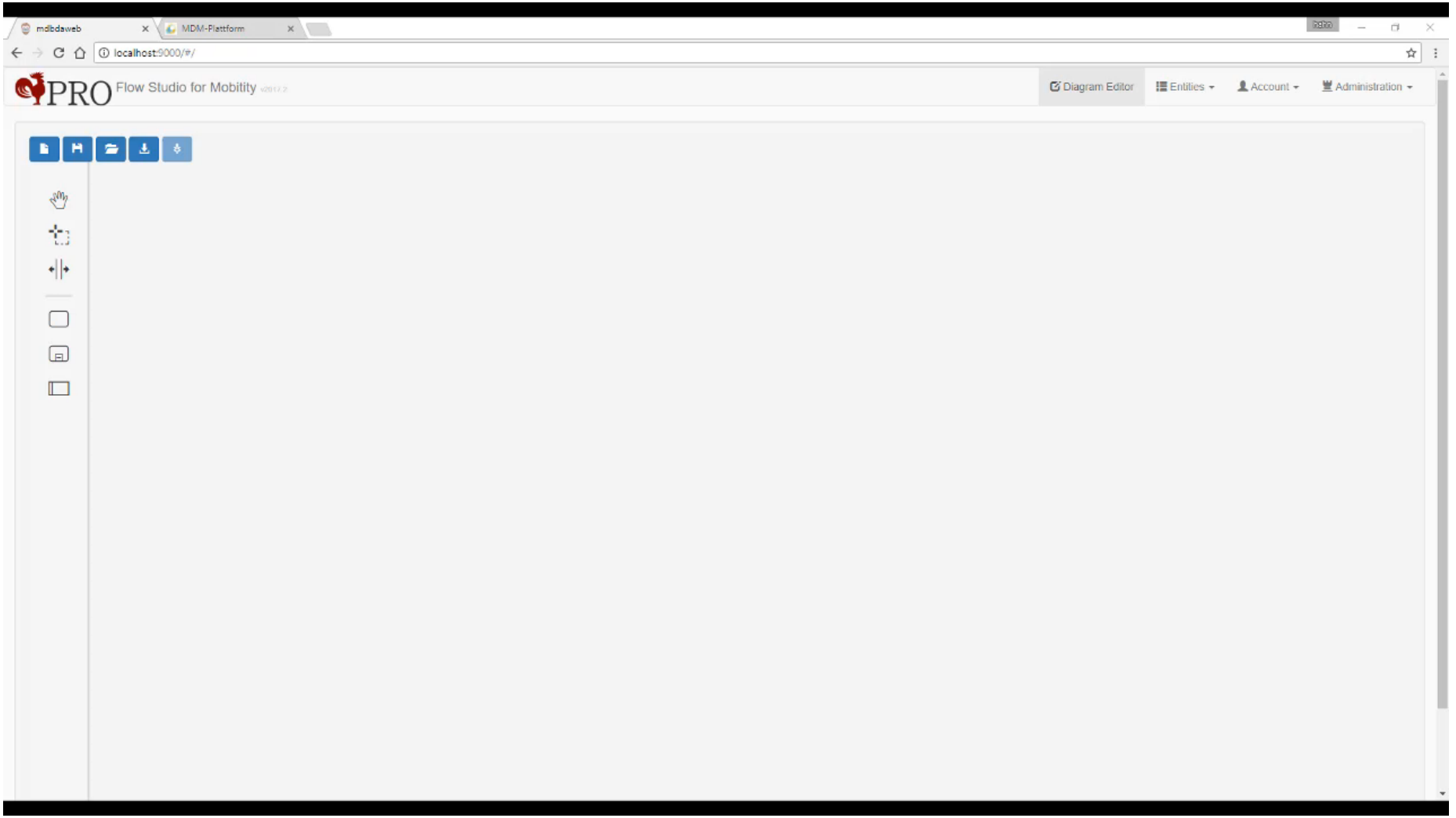
What we need

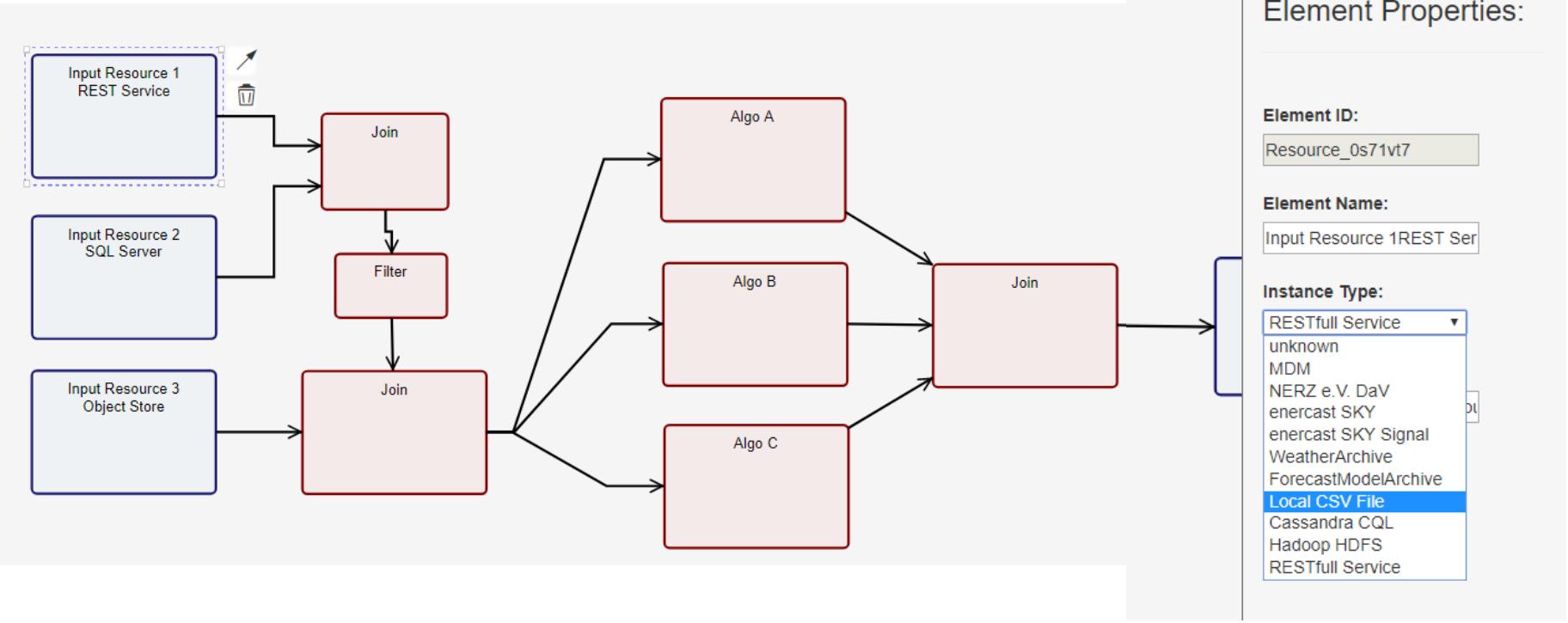
- **Web-based development environment**
  - Easy to maintain, collaborative work
- **Domain-Specific**
  - Customizable for every expert
- **Clearly arranged & easy to operate**
  - Modeling instead of programming
- **Runtime platform independent**
- **Integrable**

Flow Studio

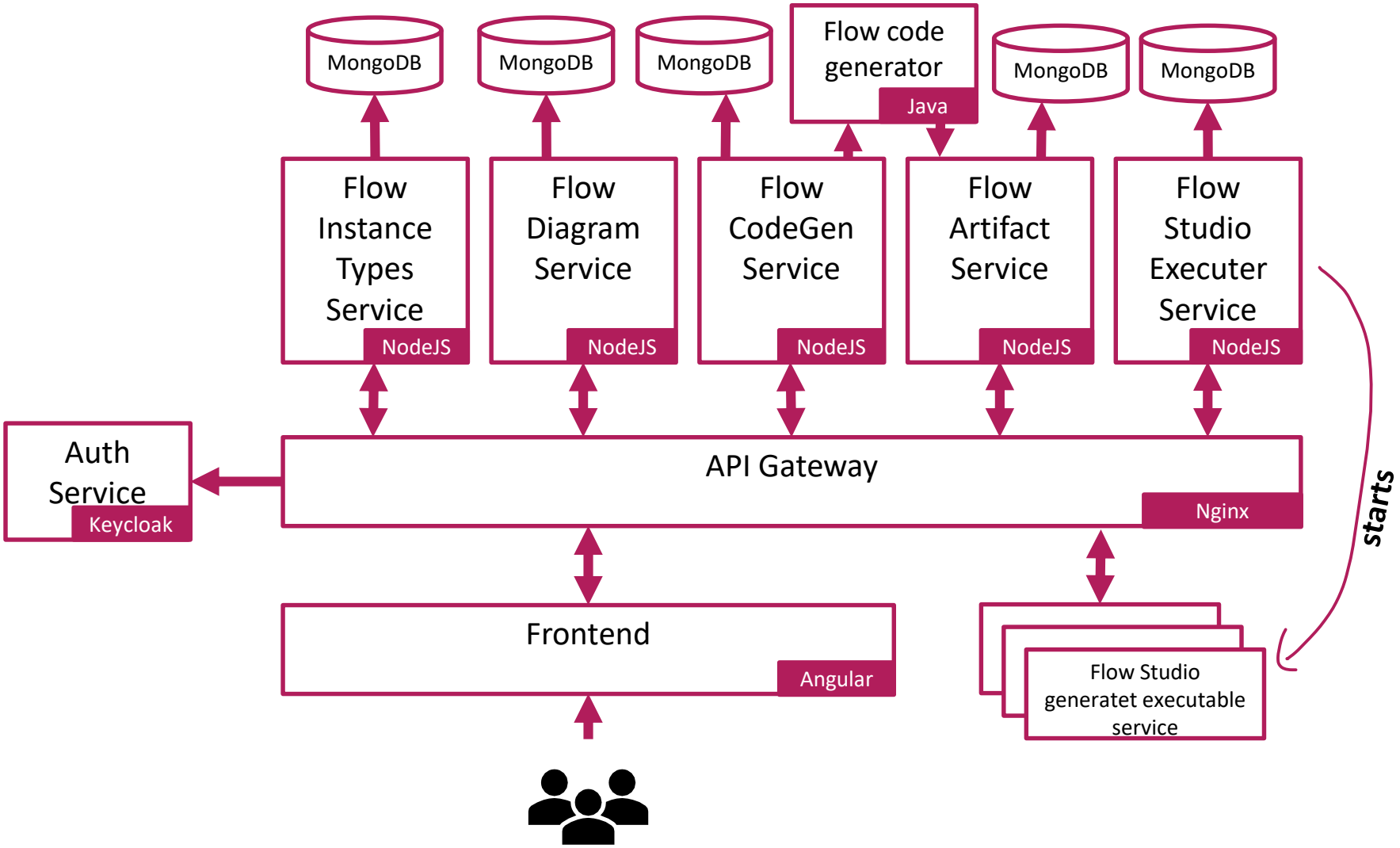

Flow Studio
Diagram Editor
Diagram Manager
Instance Types
Codegen
Deployments
API Image Downloader
Get REST_API Assets
asset_id:string
data:object
GET Request API
asset_id
data
body:object|string
header:object
Download Image
asset_id
data
body
header
Save Image as Attachement

Domain-Scecific Modelling



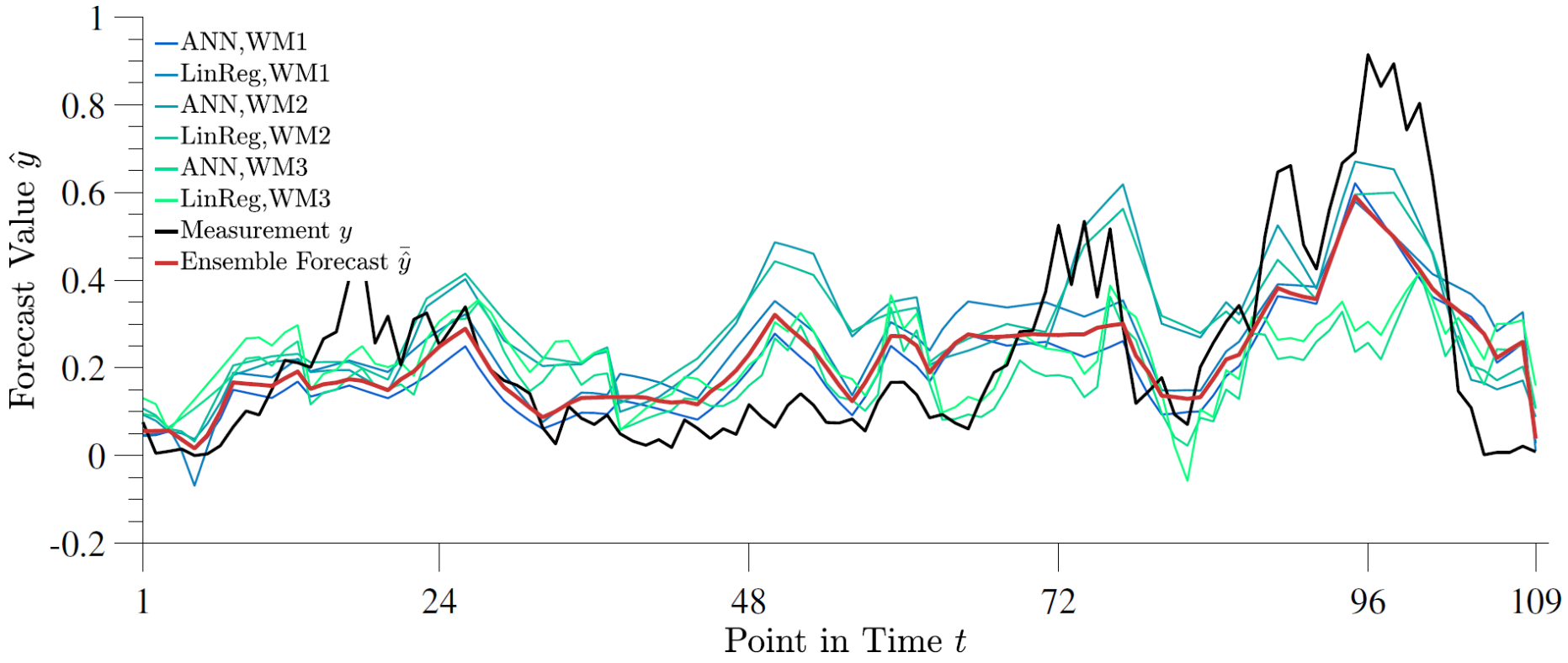

Input Resource 1
REST Service
Input Resource 2
SQL Server
Input Resource 3
Object Store
Join
Filter
Join
Algo A
Algo B
Algo C
Join
Element Properties:
Element ID:
Resource_0s71vt7
Element Name:
Input Resource 1REST Ser
Instance Type:
RESTfull Service
unknown
MDM
NERZ e.V. DaV
enercast SKY
enercast SKY Signal
WeatherArchive
ForecastModelArchive
Local CSV File
Cassandra CQL
Hadoop HDFS
RESTfull Service

Architecture

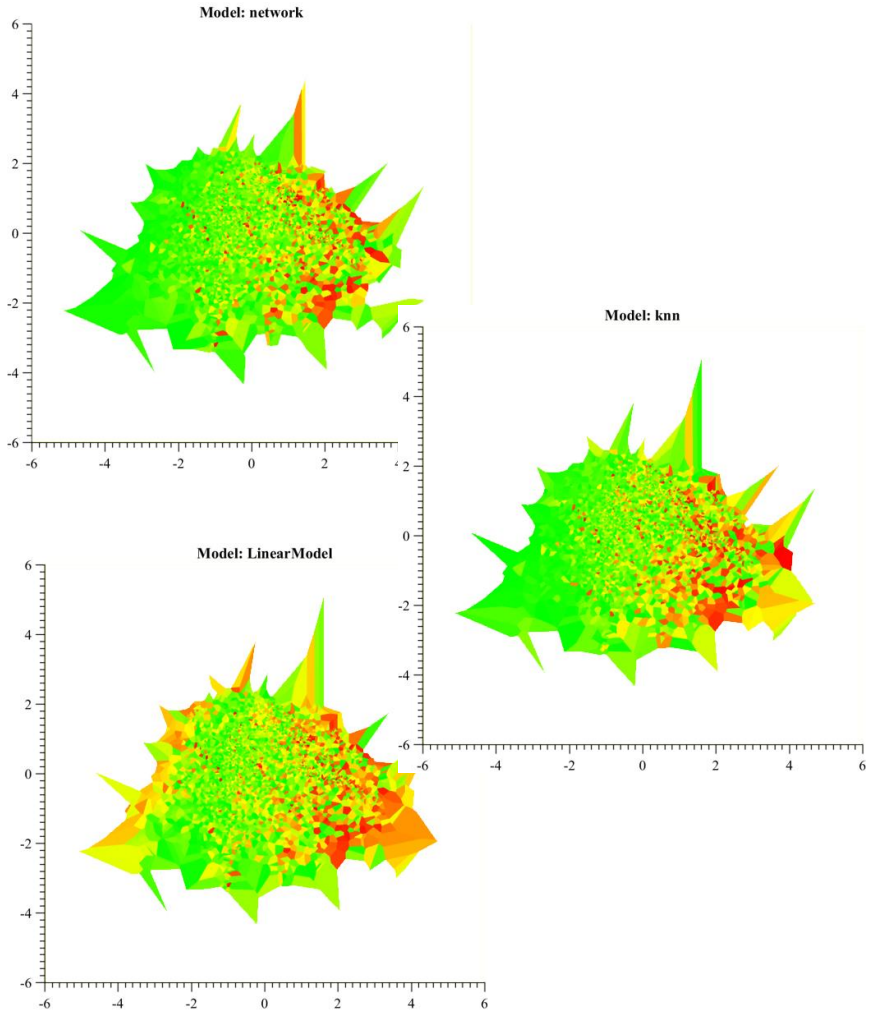


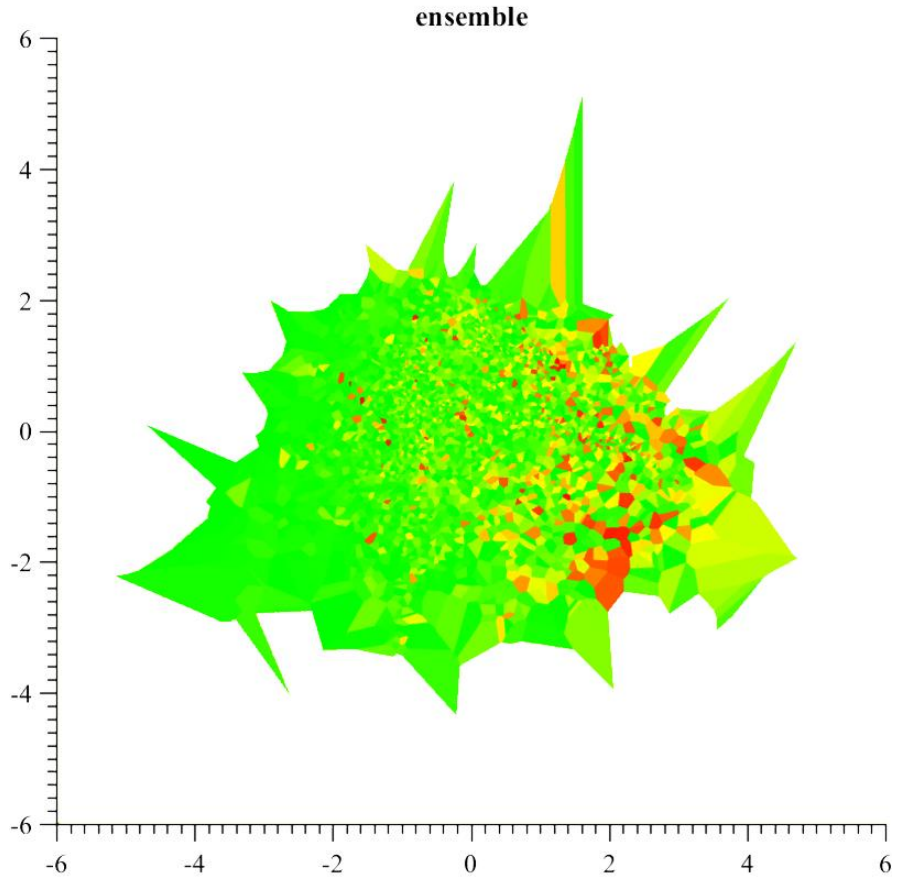
Use case: Big Energy

Improvement of renewable energy forecast

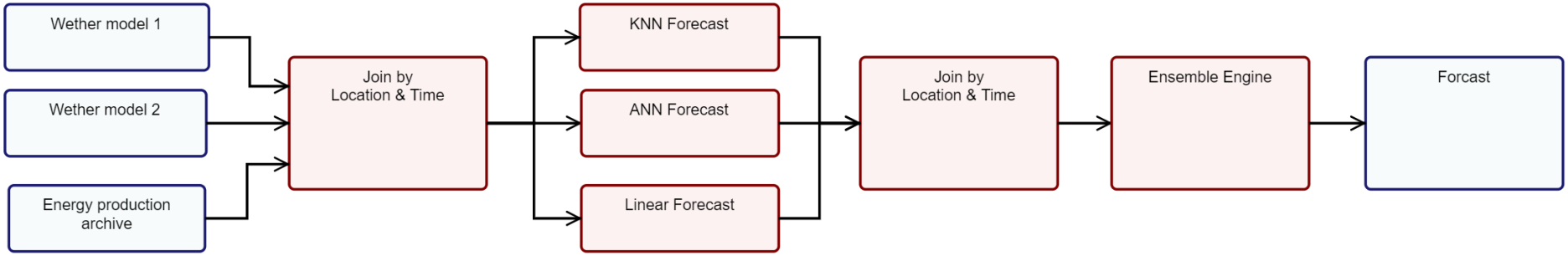


PCA of different forecast methods

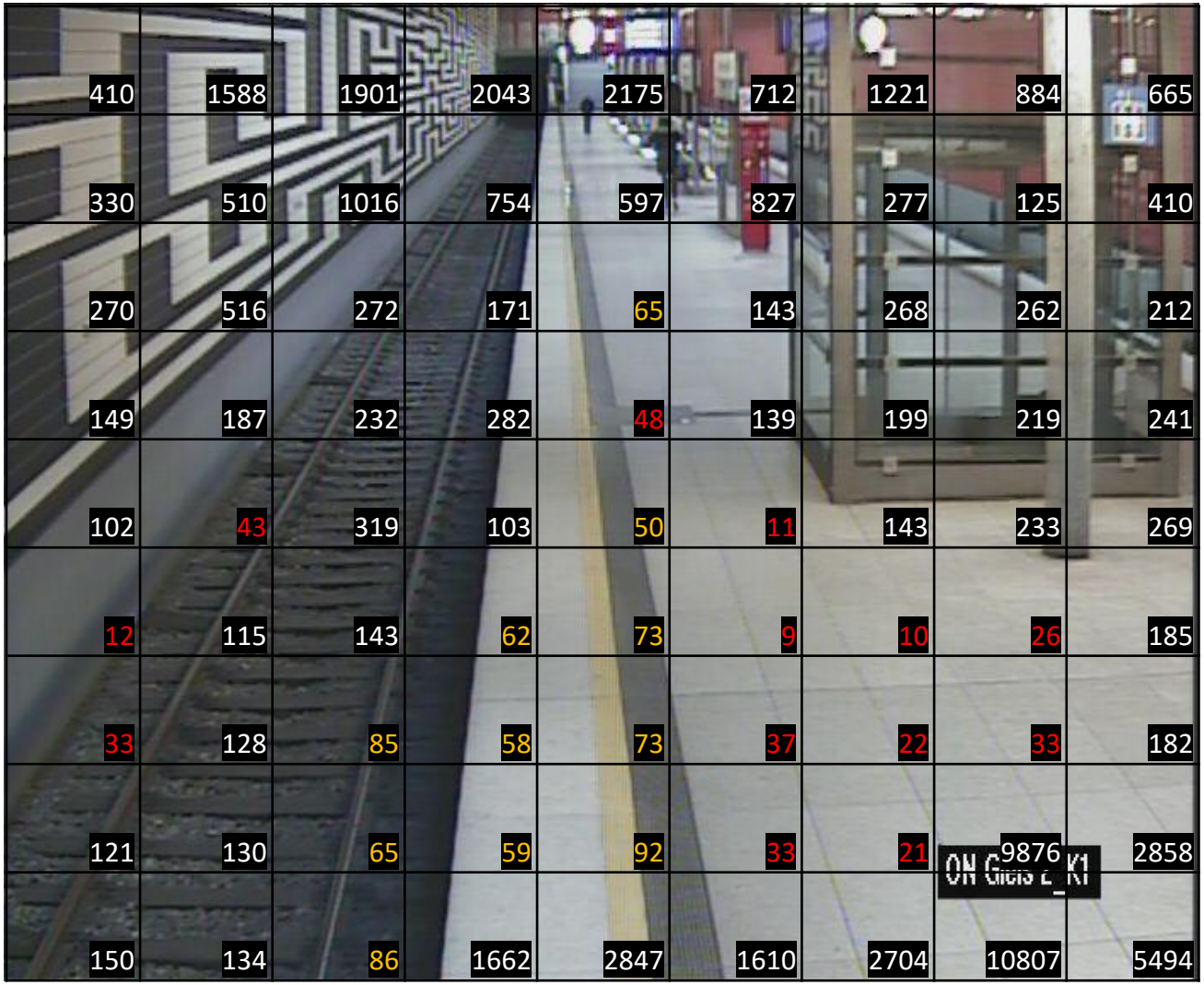




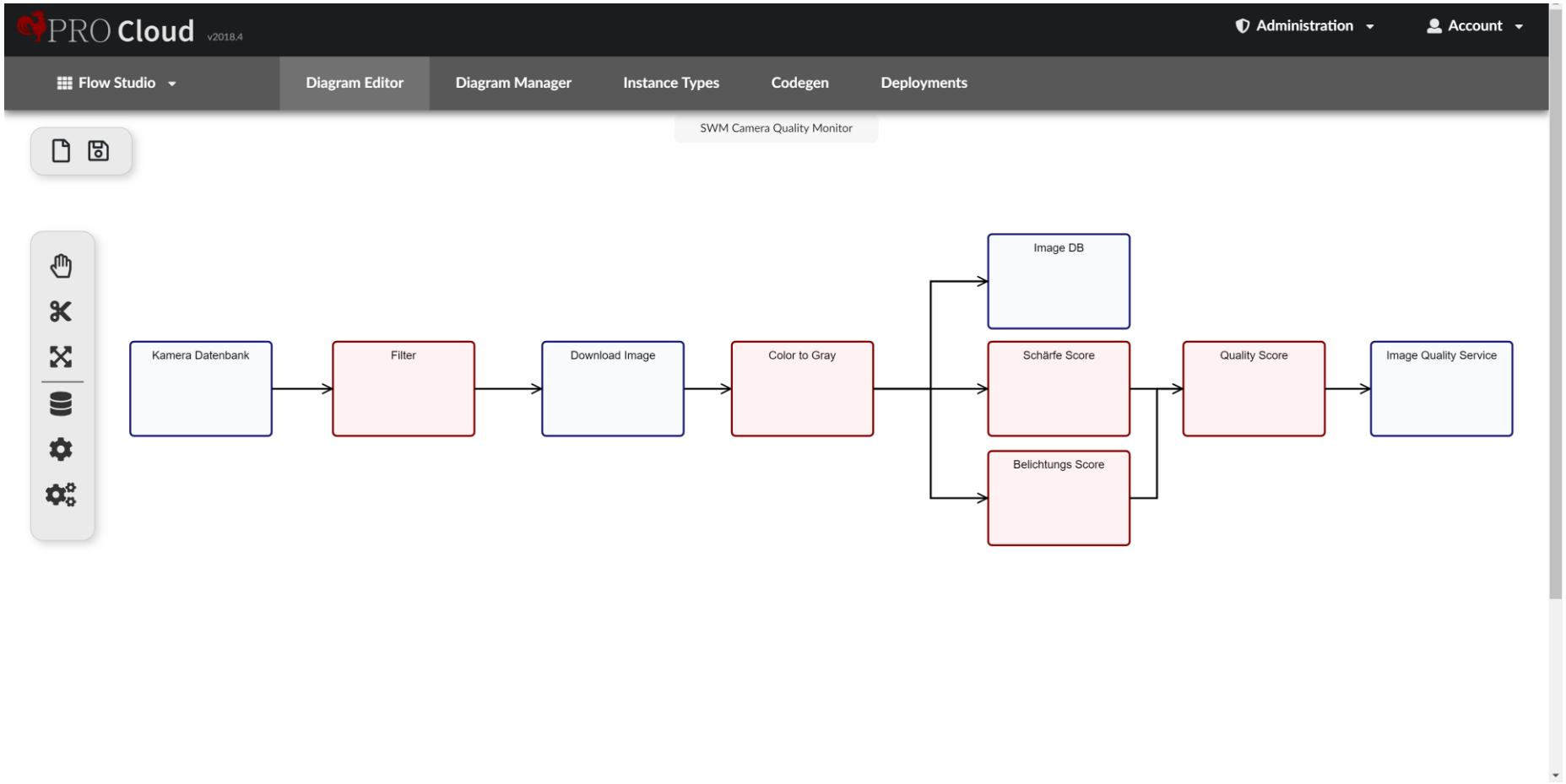
Big Energy forecast Flow



Use case: Camera image quality



Use case: Camera image quality



More use cases

- Digital Twins
- Production Optimization
- Predictive Maintenance
- Traffic and Logistics
- Quality Monitoring
- …

Outlook

domain expert & **Flow Studio** →

superhero

Marcel Hahn
hahn@uni-kassel.de