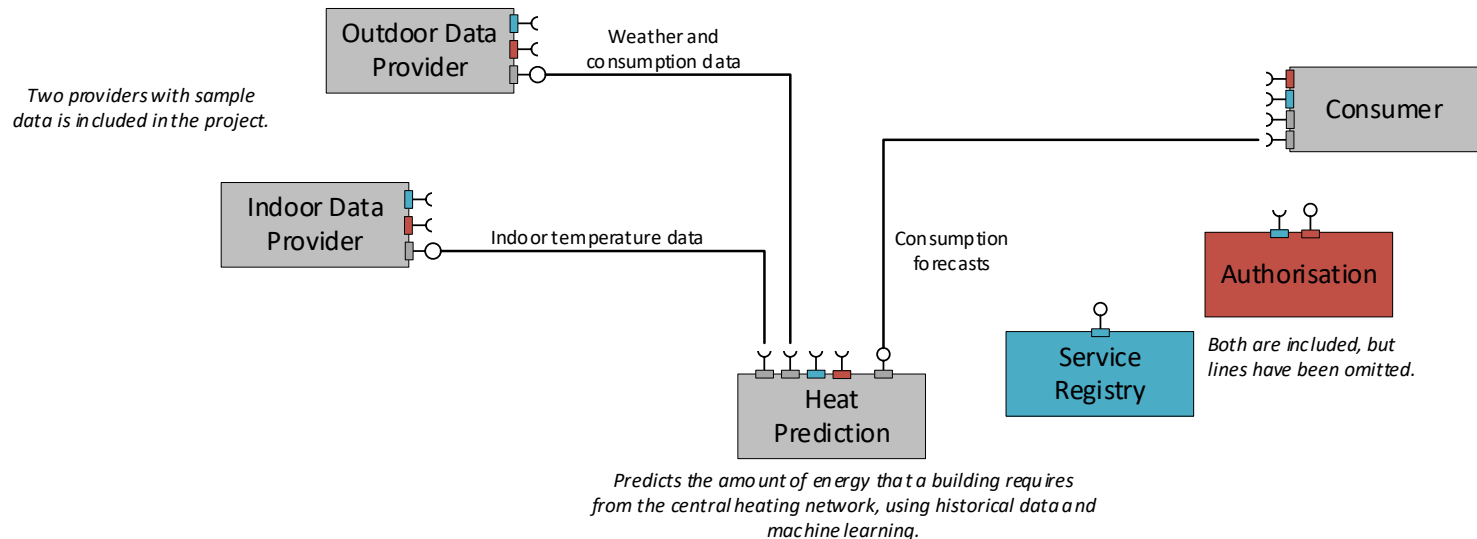


# Energy Forecast Demonstrator (Arrowhead 4.0)

Thomas Pedersen



# Energy-Forecast Overview

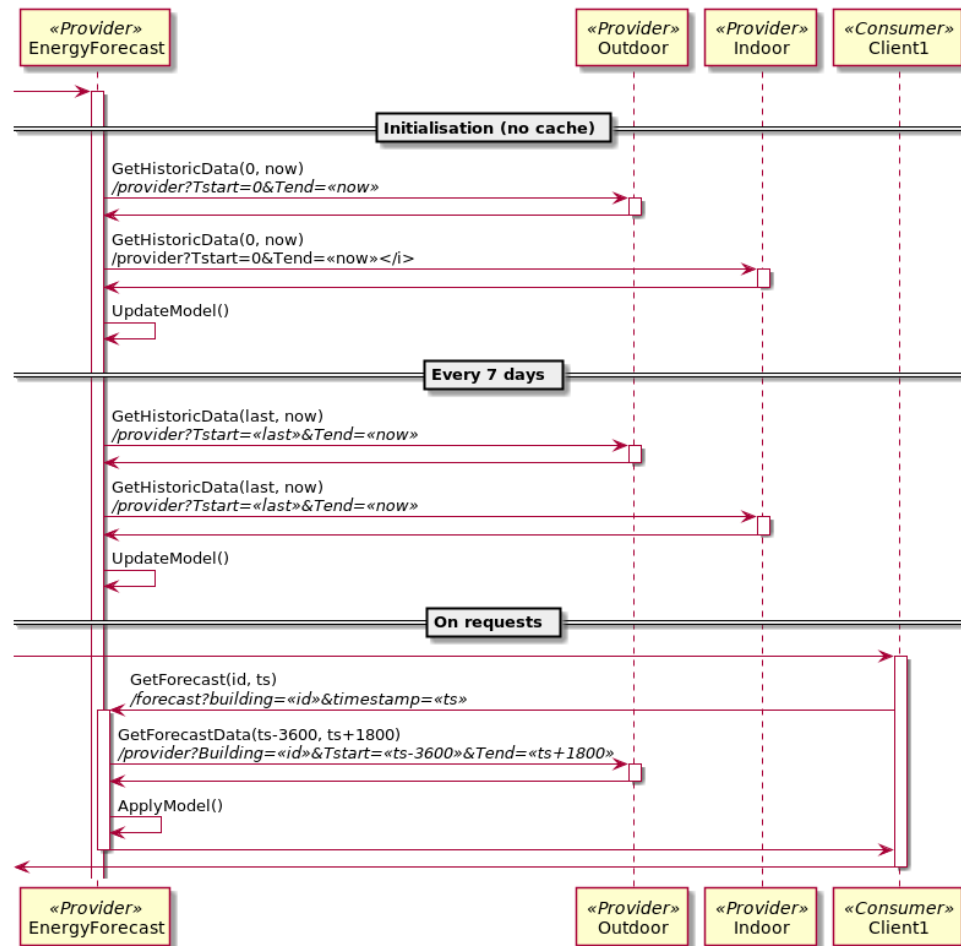


- Old figure, the Orchestrator is also included in the 4.0 version.
- All systems run in secure (TLS) mode.

# Sample Data

- Hourly outdoor temperatures over a year
  - Provided by PV systems, Department of Energy Technology, Aalborg University.
- Indoor temperature
  - $\max(22.0, \text{outTemp})$
- Building heat loss:
  - Formula based on building size and materials.
  - Brick walls, concrete floor, and asbestos roof.
  - Scaled to fit close with a real building.
  - $\text{Math.max}(0, \text{VENTILATION} * (\text{getIndoor}(ts) - \text{getOutdoor}(ts)) * \text{MATERIAL} / \text{SCALE})$
- Water heating:
  - Formula, similar to a measured data set.
  - $-0.01f * \text{getOutdoor}(ts) + 0.3f$

# Energy Forecast Provider



# Data Model

