

Innovation Needs Models

Enterprise Architecture and Standardization to survive as innovation leader and/or to have the chance to innovate



Agenda

- Introduction
- Why do I need models?
- Who needs modelling?
- Why do you need an architect?
- What Architectures are necessary – and what leads us to Cloud Architecture?



Peter Lieber



Why do I need models?

- IOT/Apps
 - Safety/Security
- LOB
 - Person Data, Credit Card,... (e.g. EU GENERAL DATA PROTECTION REGULATION)

→ Standards → State of the Art

Decides if you go to jail (if anybody dies or becomes insured) or if you pay penalties...

Who Needs Modeling?

Information Management



Companies collecting, controlling and managing information

- Insurance companies
- Telecommunication companies
- Banks
- etc.

Cyber Physical Systems



Manufacturers of embedded devices

- Automotive
- Healthcare
- Defense
- Railway
- Customer Electronics
- etc.

Application Development



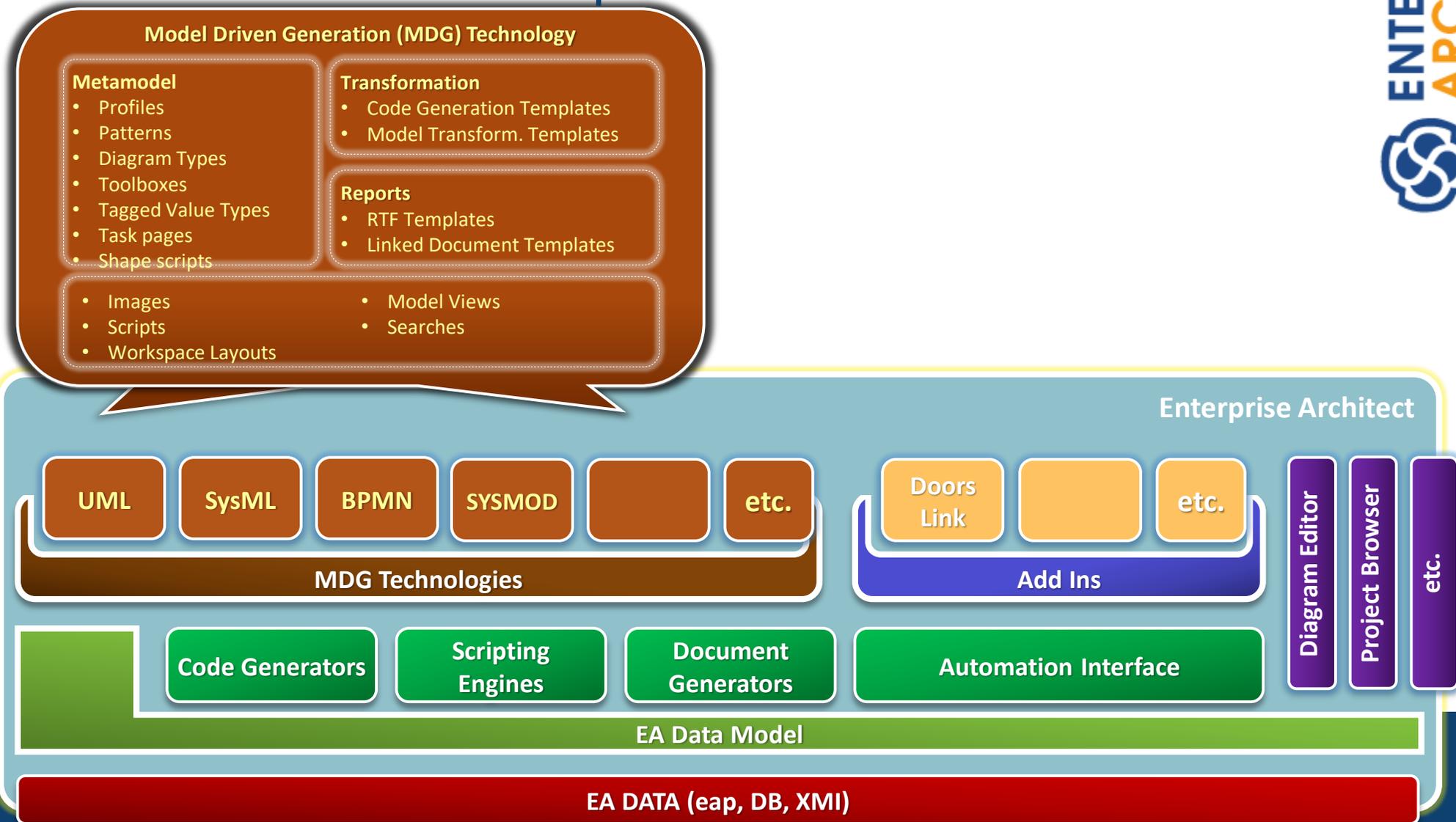
Companies developing application software

- Web Applications
- Mobile Applications
- Desktop Applications
- etc.

It is all about industry standards

- Smart Grid (IEC TC57, CIM)
- E-Health (EHR,CDA,BRIDG, ISO 215)
- Geospatial (ISO/TC 211, CEN/TC 287, OGC)
- Retail (ARTS UnifiedPOS)
- Government (eDAIS)
- Automotive (AUTOSAR)
- Intelligent Transport Systems (DATEX II)
- Social Security (Medicaid InformationTechnology Architecture – MITA)
- E-Commerce (OASIS Unified Business Language)
- Geology (GeoSciML, SoilML, WaterML)
- Biodiversity (European Distributed Institute of Taxonomy)
- Rail Transport (TRAX)
- EDI (ASC X12)
- Financial Services Messaging (SWIFT/SEPA)
- Ports (EFFORTS)
- Telecommunications (eTOM, eTAM, SID)
- Object Management Group (UML, XMI, DDS, MPMN, UPDM etc)
- NIEM
- ...

Enterprise Architect is a platform



Architecture

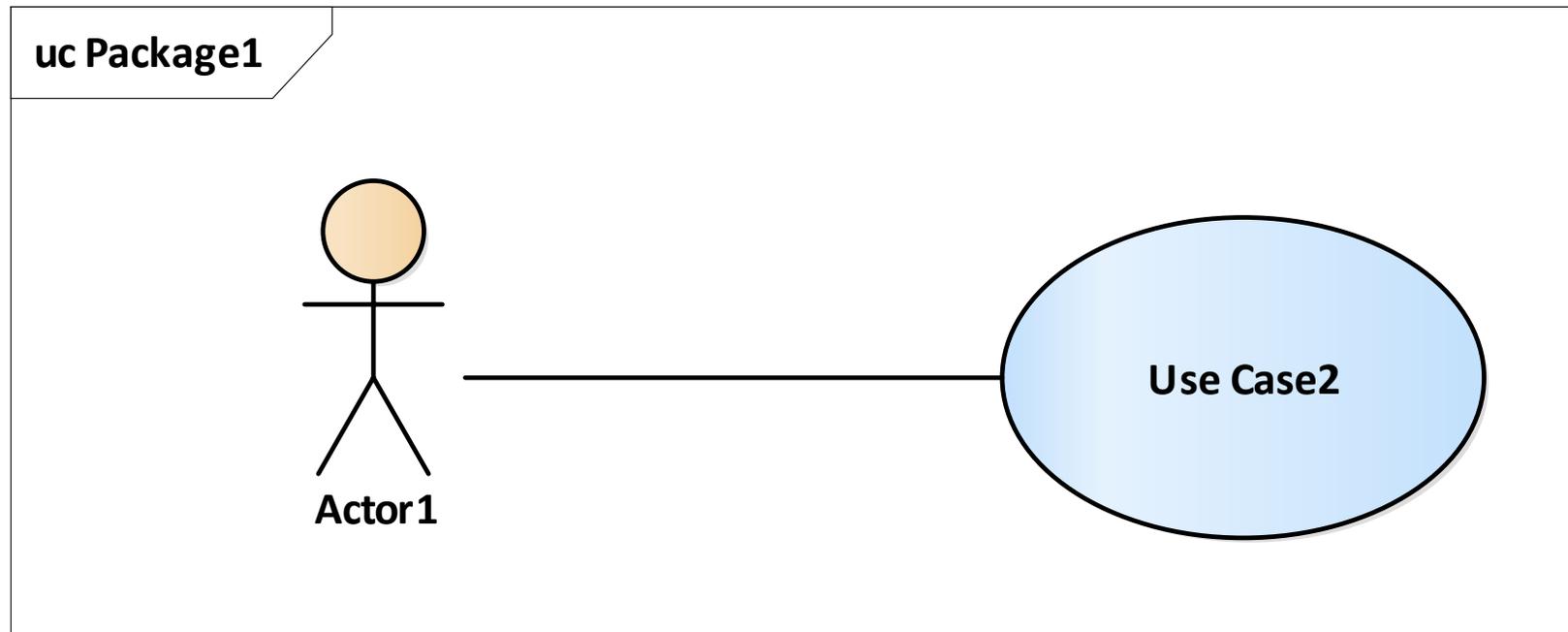
- Software, Systems Models for Design, Development
- Deployment Models for Cloud Architecture
- Trust Models for Cyber Security

Software, Systems

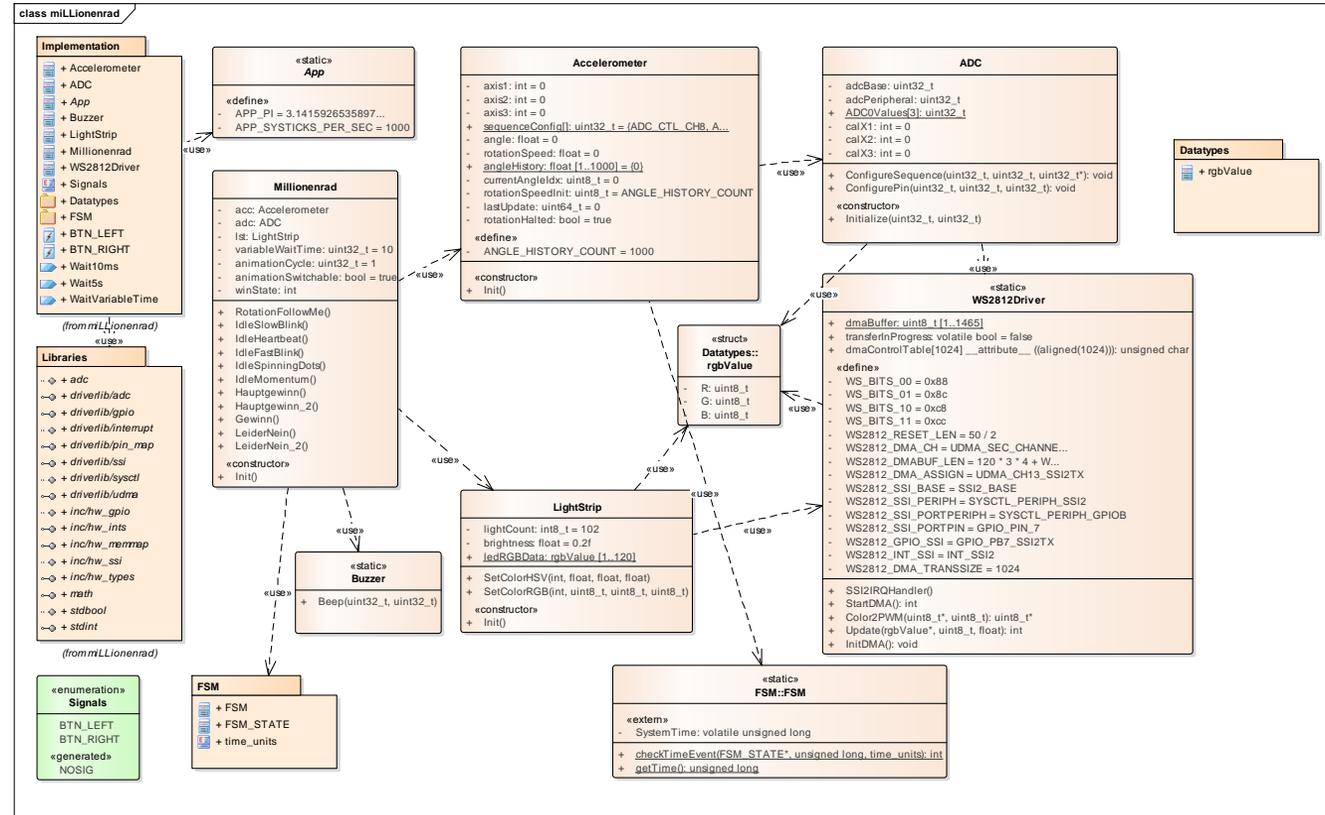
Software, Systems Modelling
Model Based Software/Systems Engineering



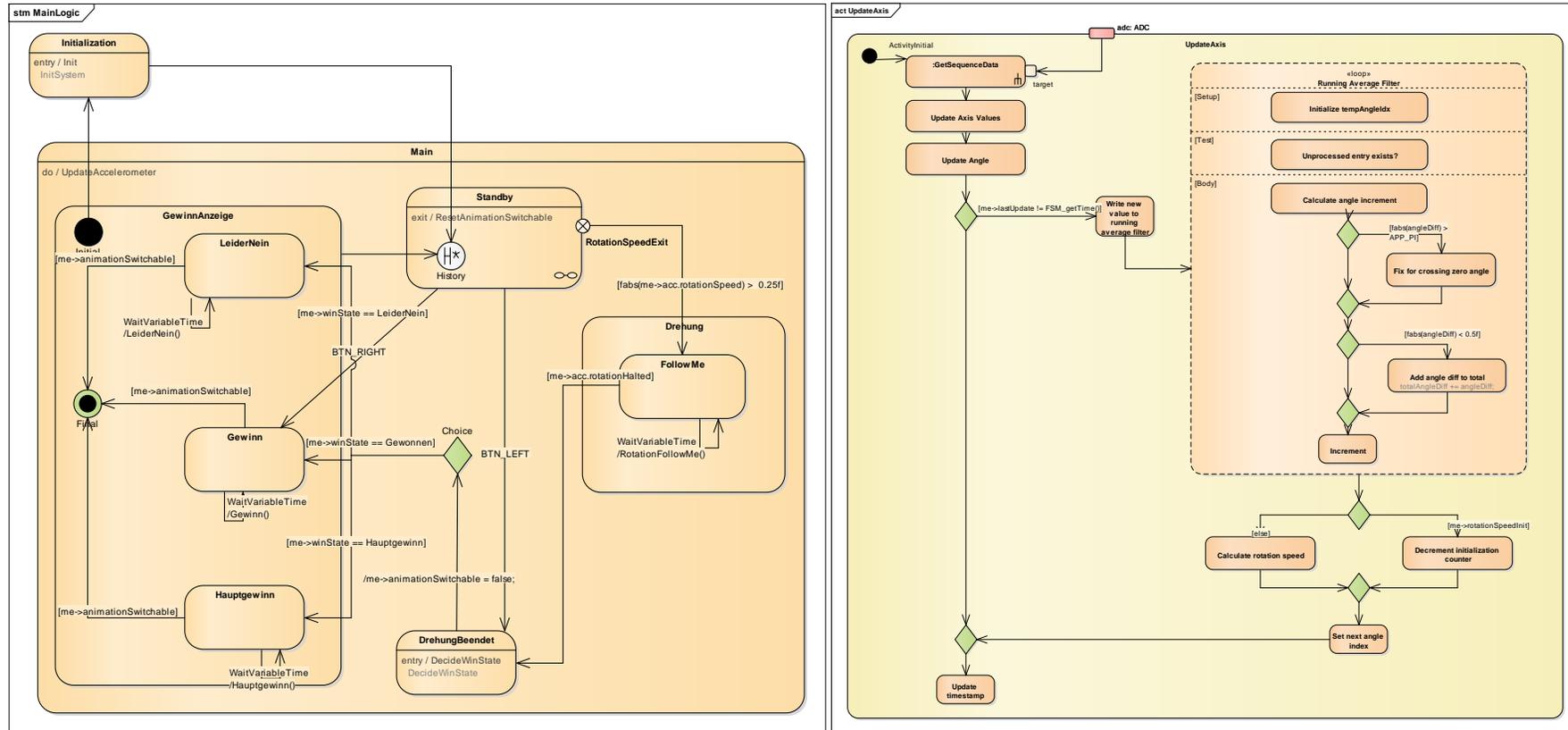
UML? Viele kennen nur das:



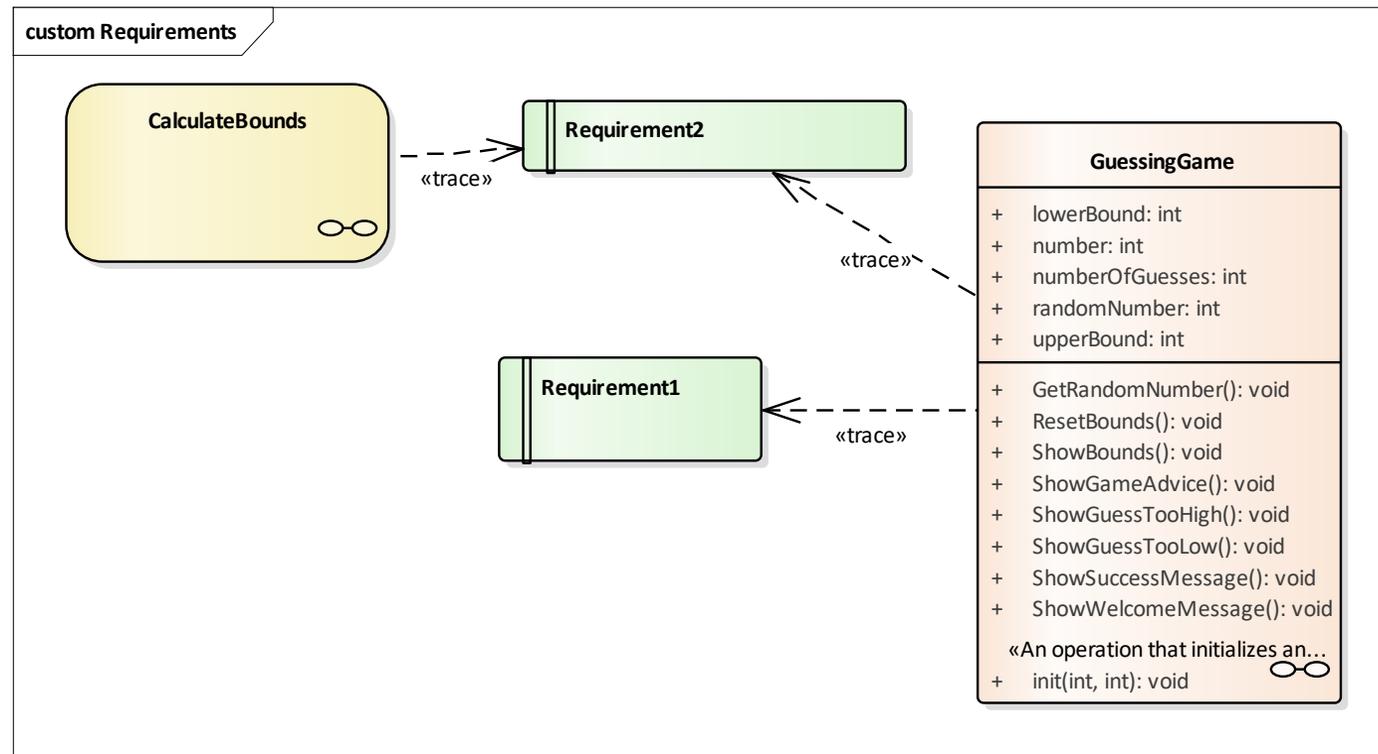
Plan Software → UML



Plan Software → State and Activity

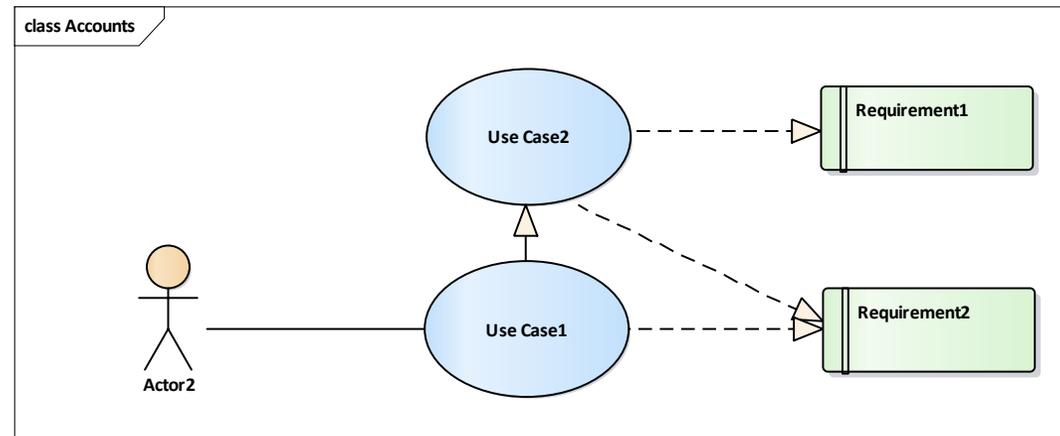


UML! Ist aber viel mehr...



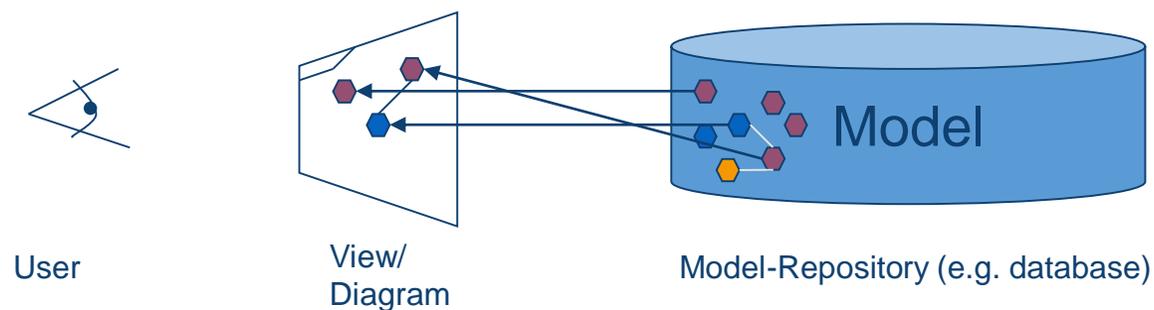
Use Case

- Use Case to Requirement N:M



Model and View

- In case of graphical languages, it has to be distinguished between the model and various views
- *A view is a projection of a model that shows it from a specific perspective or position and omits objects that are not relevant for this perspective.*



Traceability in EA

- Connectors
- Different Traceability Views
- Relationship-Matrix

The screenshot displays the Enterprise Architect interface with two main windows:

Traceability

	Acoustic security	Button Feedback	CardNB unique	continuous usage	duration of money wd.	EU 34878764	good usability	mechanical Security	reduce # of employess
load cellular				↑					
load chip	↑			↑					
perform Authentication	↑								
print receipt						↑			
support Materials		↑					↑		
withdraw Money				↑	↑		↑		↑

Traceability View: A tree view showing the 'withdraw Money' use case. It includes sub-items like 'implements' (with checkboxes for continuous usage, good usability, duration of money wd., and reduce # of employess), 'links to' (perform Authentication), 'links from' (Customer, print receipt), and 'needed by' (Performance Test "withdraw money").

Project Management

Resource Allocation Table:

Resource	Role
Dietmar Stei...	Business Analys
Franz Maier	Project Manager

Resource Details for Dietmar Steinpichler:

- Resource: Dietmar Steinpichler
- Role: Business Analyst
- Completed (%): 10
- Allocated Time: 1,000000
- Expected Time: 0
- Time Expended: 0
- Start Date: 11.10.2010
- End Date: 20.10.2010

Description: Finish the specification and get signature for this UC!

Navigation: * Resource Allocation | Effort | Risks | Metrics

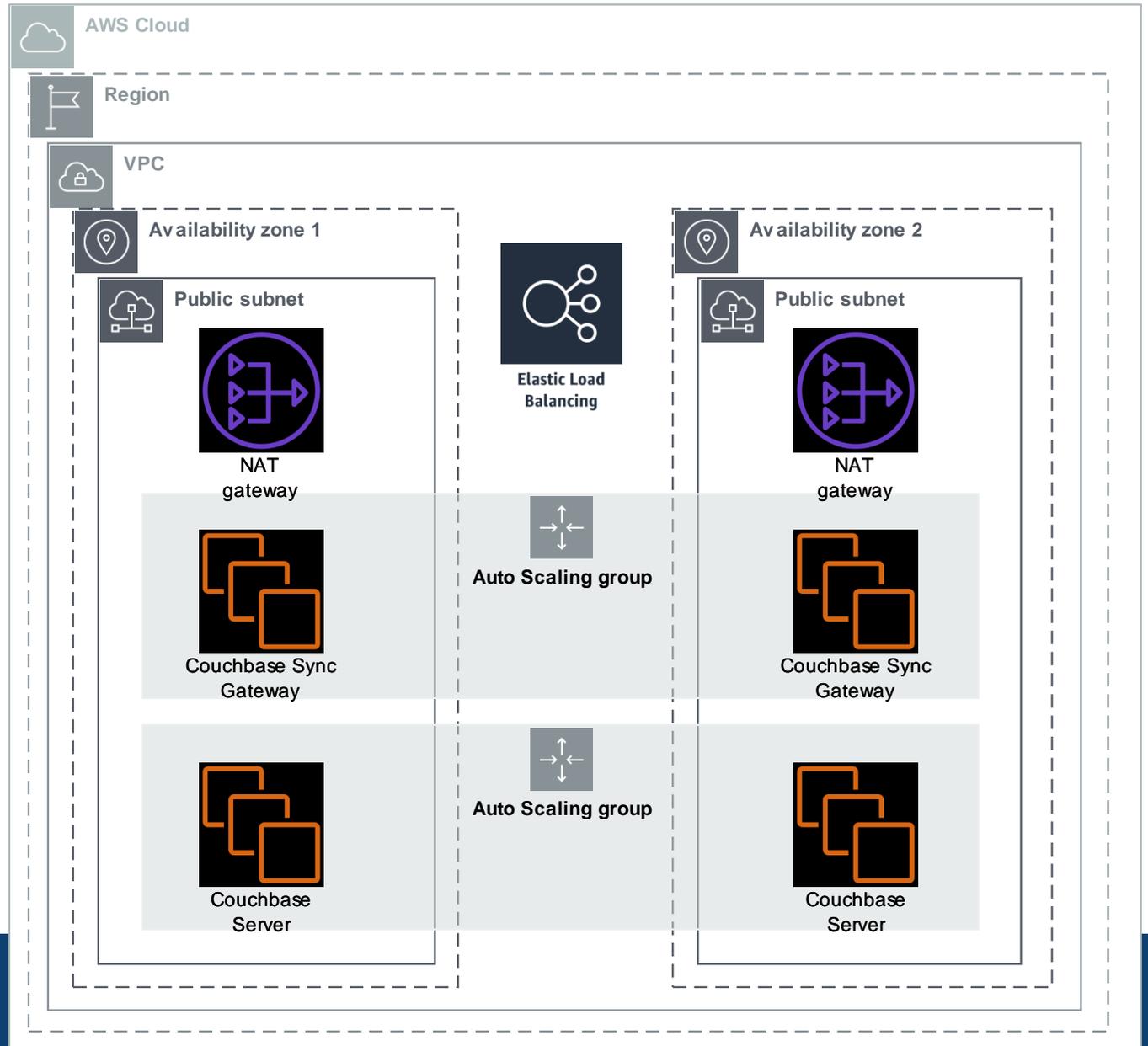
Cloud Architecture

Deployment Modelling



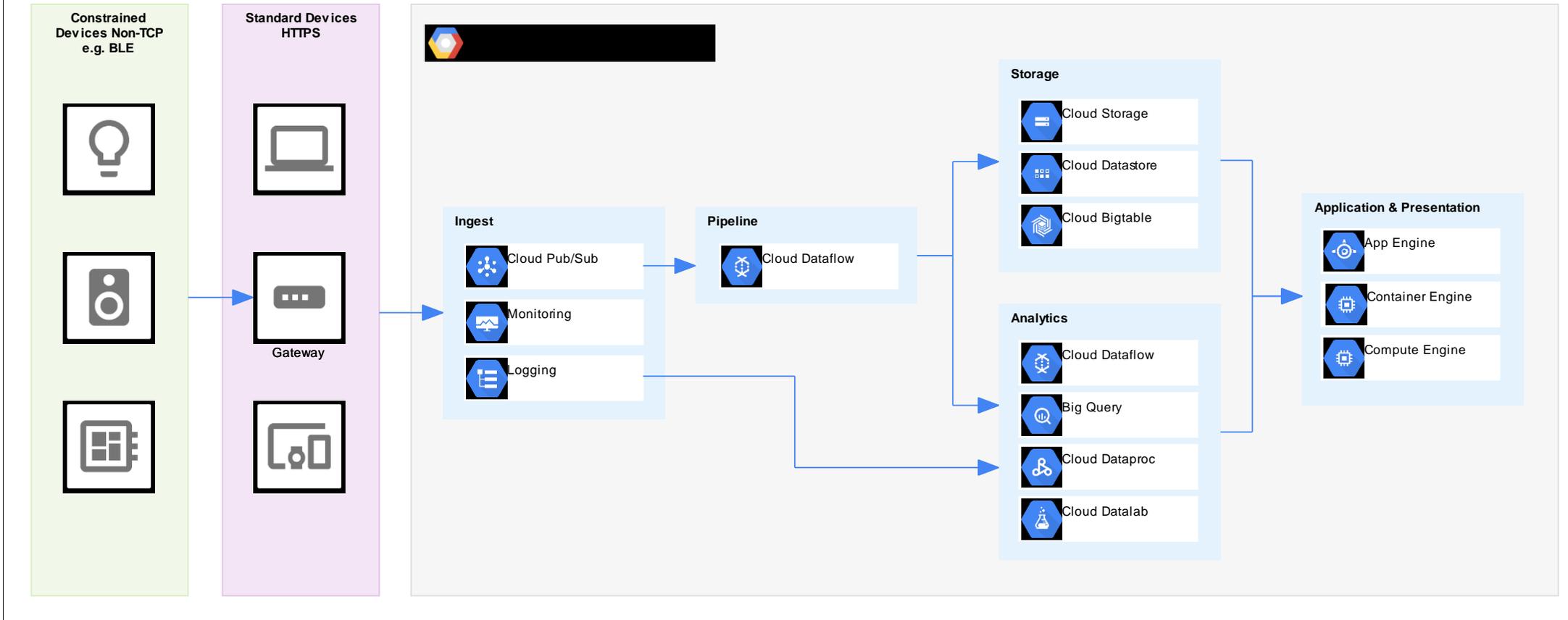
AWS

cmp Couchbase on AWS



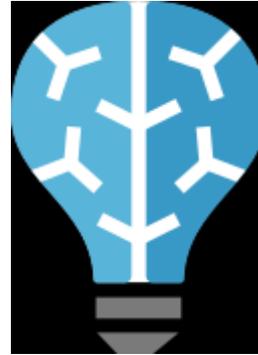
GCP

cmp Sensor stream ingest and processing



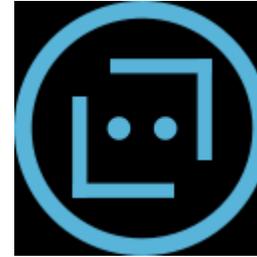
Azure

class AI and ML Service Color



Batch AI

«Image»



Bot Services

«Image»



Cognitive Services

«Image»



Genomics Accounts

«Image»



**Machine Learning
Service Workspaces**

«Image»



**Machine Learning
Studio Web Service
Plans**

«Image»



Machine Learning



Machine Learning

Cyber Security

Threat Modelling





THREATGET (THREAT MODELLING FOR CYBER SECURITY)

www.threatget.com



ThreatGet - Threat Analysis and Risk Management

Domain knowledge

Cybersecurity expertise

Modeling knowhow

Benefits

ThreatGet

- Automated threat analysis based on current threat intelligence
 - Traceability from threats to requirements
 - Continuous process, integrated with model-based engineering
- <https://www.threatget.com/>

Contact

...Peter Lieber...

...You will find me on-the-line...