Intelligence & Reasoning for the Web of Objects

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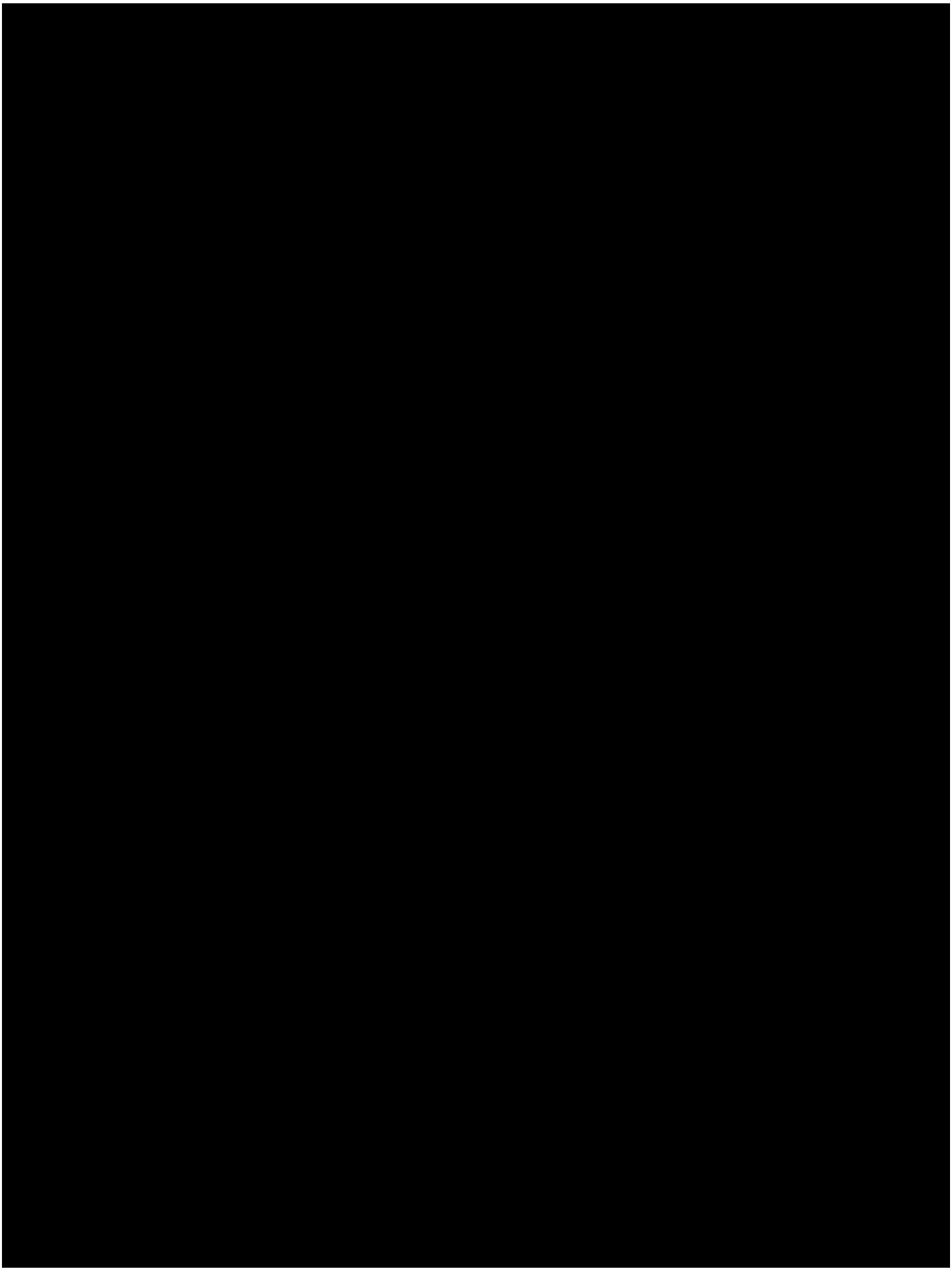
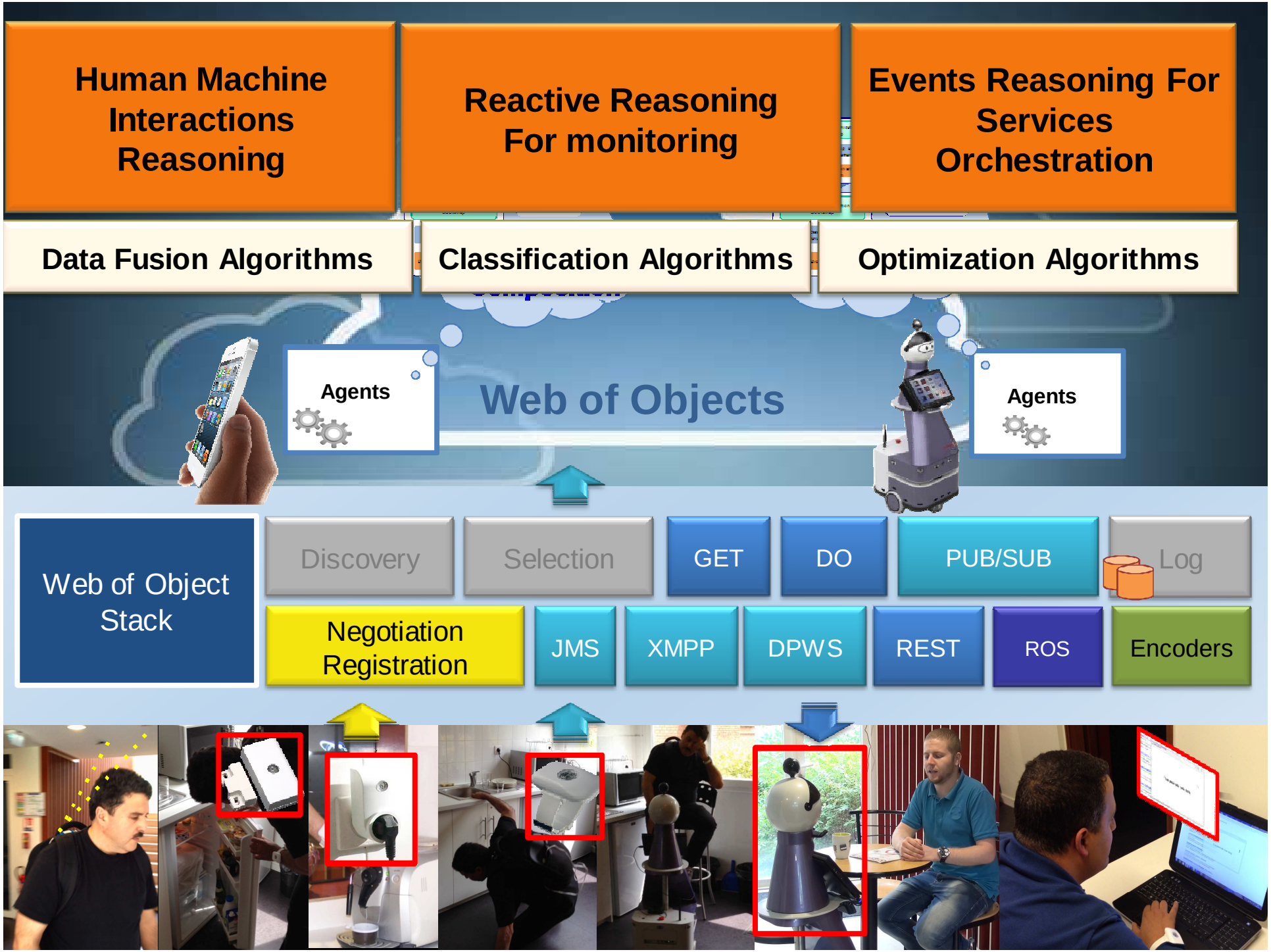
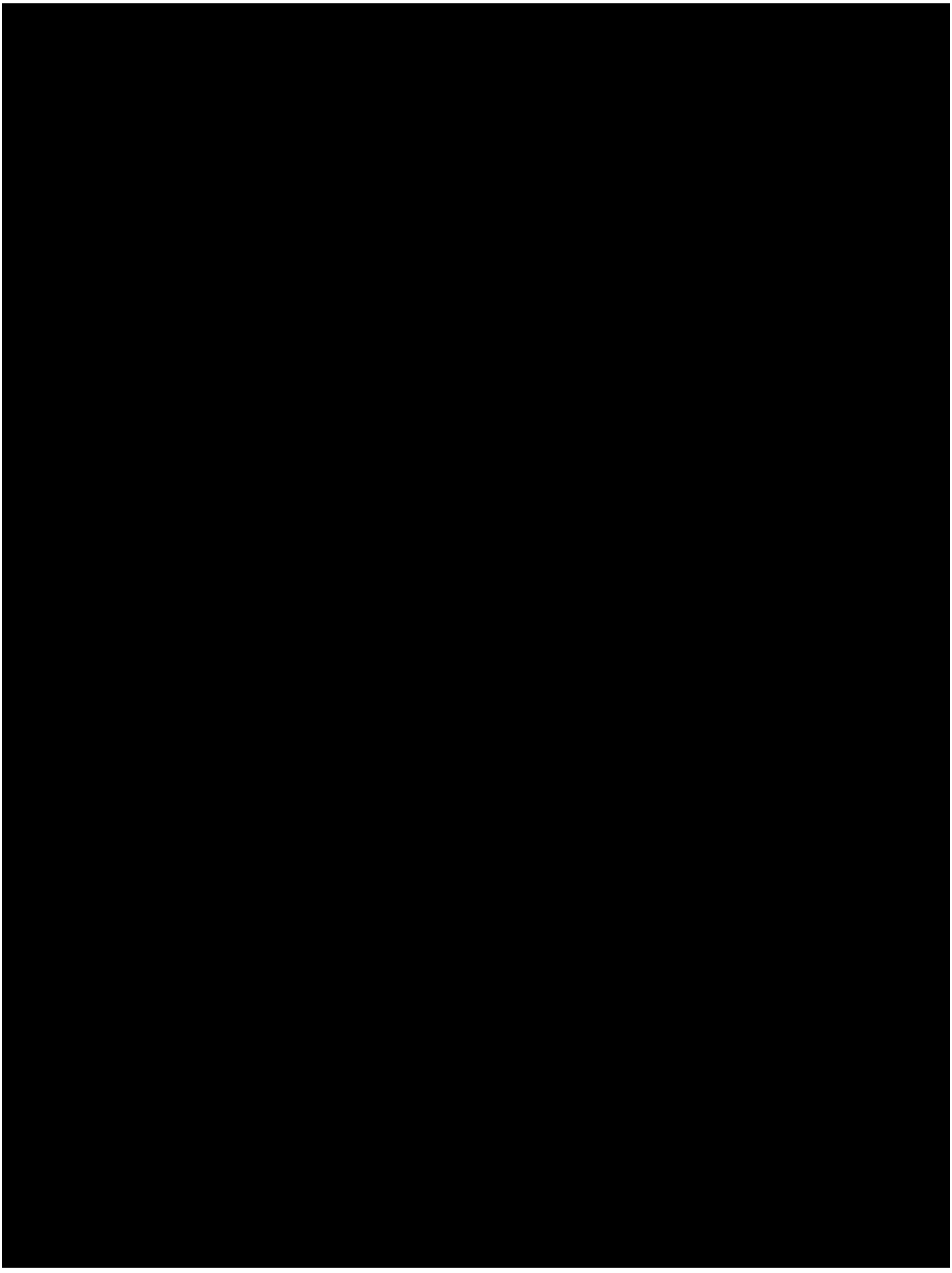


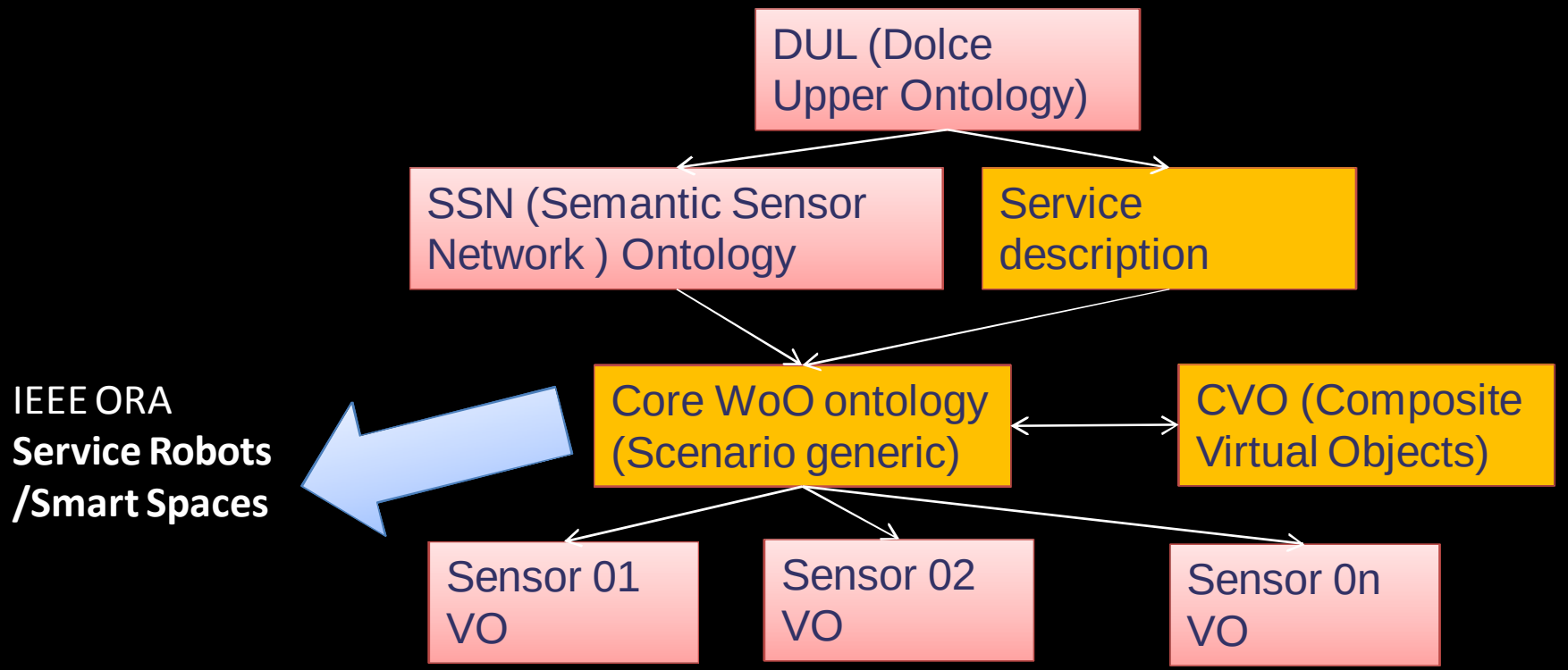
Need Logical Reasoning Models ?
Inference Rules

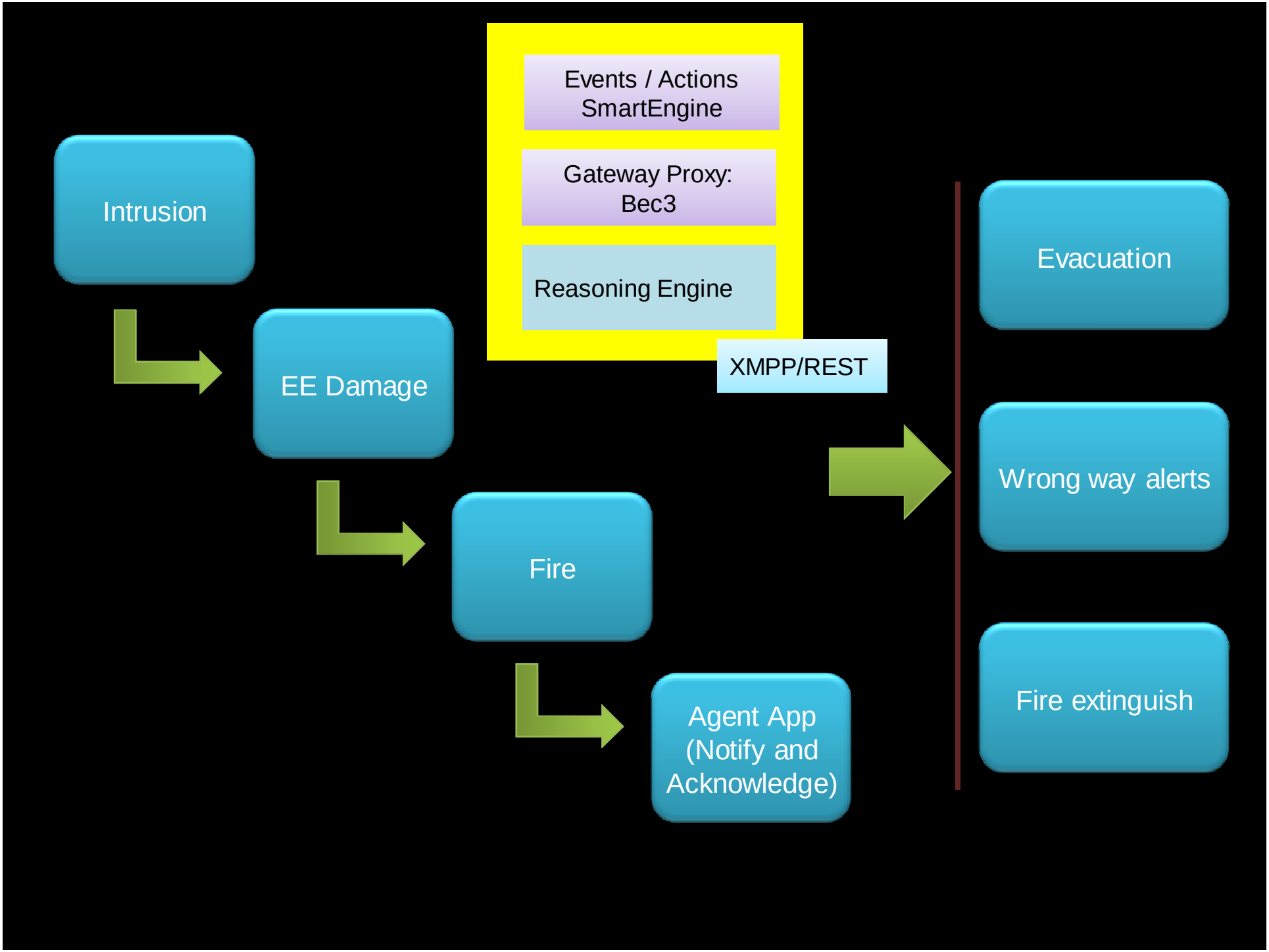
- Triggered by new assertions in the KB
- Assert new relations in the KB
- Action rules
  - Reactive (to events) or Triggered (by assertions in the KB)
  - Assert new relations in the KB
  - Determine and send commands for actions
- Rule Scheme (Production Rules)
  - IF Observation, Condition, Events
  - If Event, Fluent then Trigger
  - Then Trigger Event, Change Fluent State, Do Some Action or Create New Information

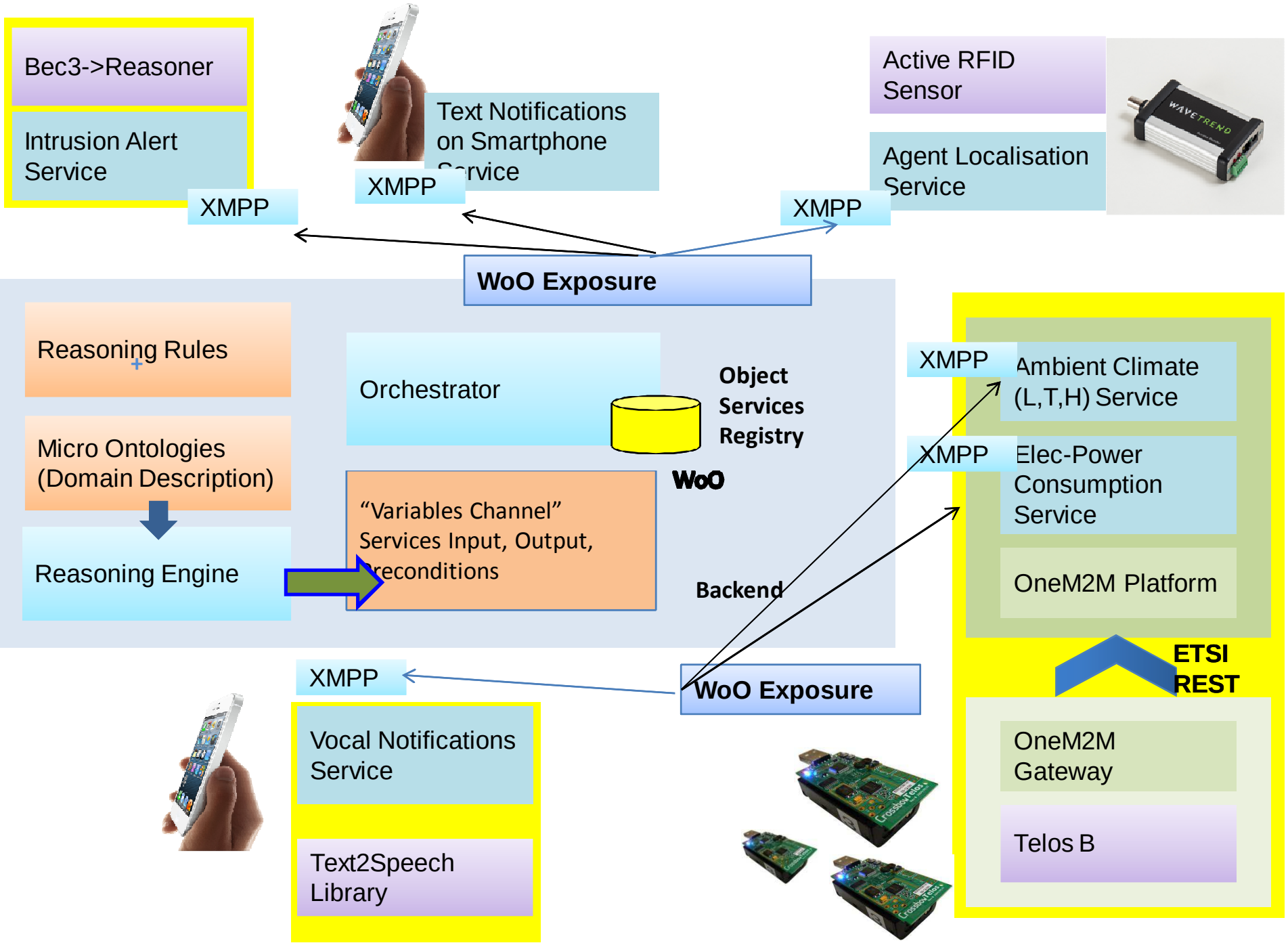
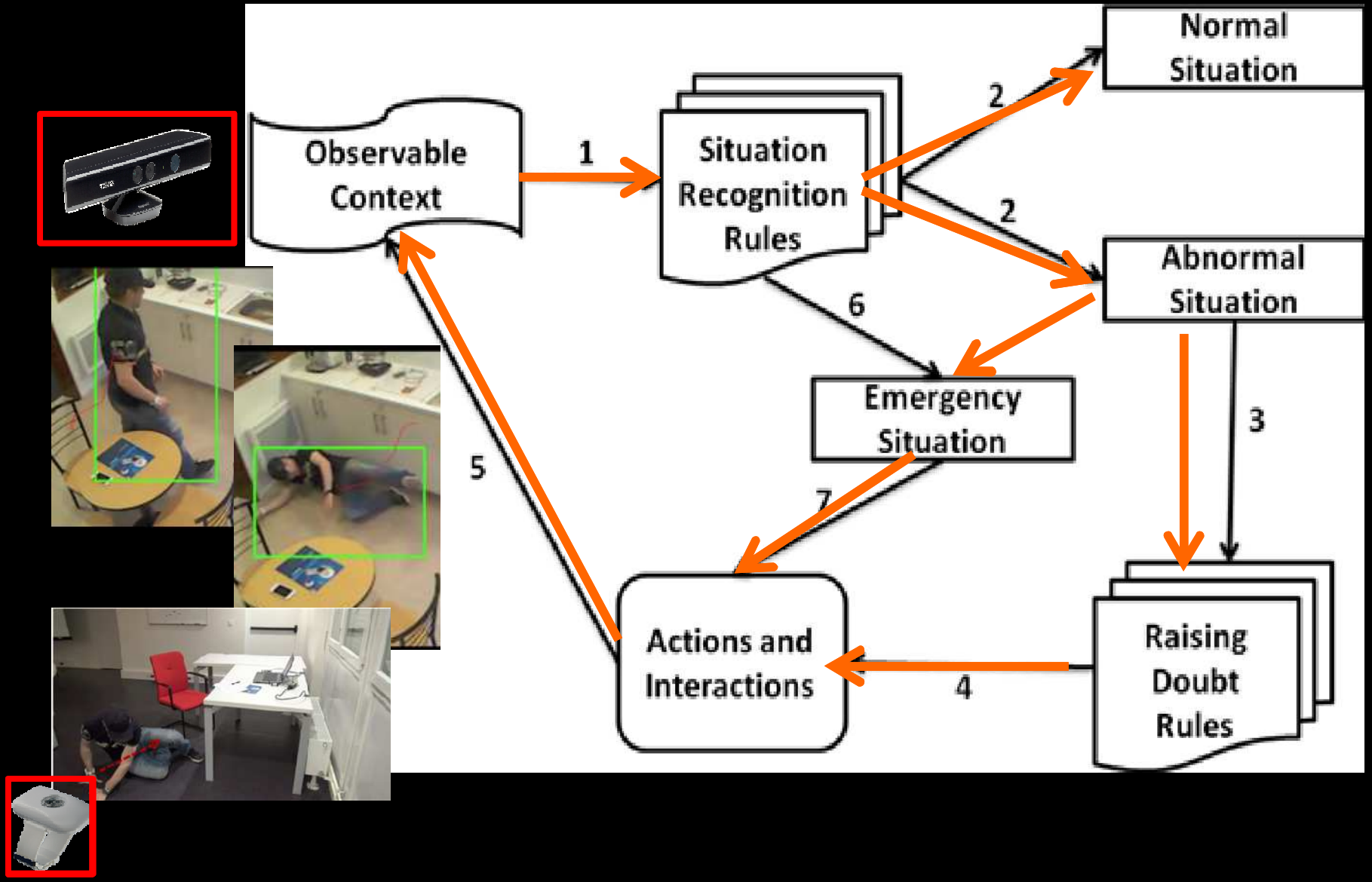

Human Machine Interactions Reasoning
Reactive Reasoning For monitoring
Events Reasoning For Services Orchestration
Data Fusion Algorithms
Classification Algorithms
Optimization Algorithms
Agents
Web of Objects
Agents
Web of Object Stack
Discovery
Selection
GET
DO
PUB/SUB
Log
Negotiation Registration
JMS
XMPP
DPWS
REST
ROS
Encoders



WoO Ontology Modeling




Events / Actions SmartEngine
Gateway Proxy: Bec3
Reasoning Engine
XMPP/REST
Intrusion
EE Damage
Fire
Agent App (Notify and Acknowledge)
Evacuation
Wrong way alerts
Fire extinguish


Bec3->Reasoner
Intrusion Alert Service
XMPP
Text Notifications on Smartphone Service
XMPP
Active RFID Sensor
Agent Localisation Service
XMPP
WaveTrend
WoO Exposure
Reasoning Rules
Micro Ontologies (Domain Description)
Reasoning Engine
Orchestrator
Object Services Registry
WoO
"Variables Channel" Services Input, Output, Preconditions
Backend
XMPP
Ambient Climate (L,T,H) Service
XMPP
Elec-Power Consumption Service
OneM2M Platform
ETSI REST
OneM2M Gateway
Telos B
XMPP
WoO Exposure
Vocal Notifications Service
Text2Speech Library

Semantic Monitoring