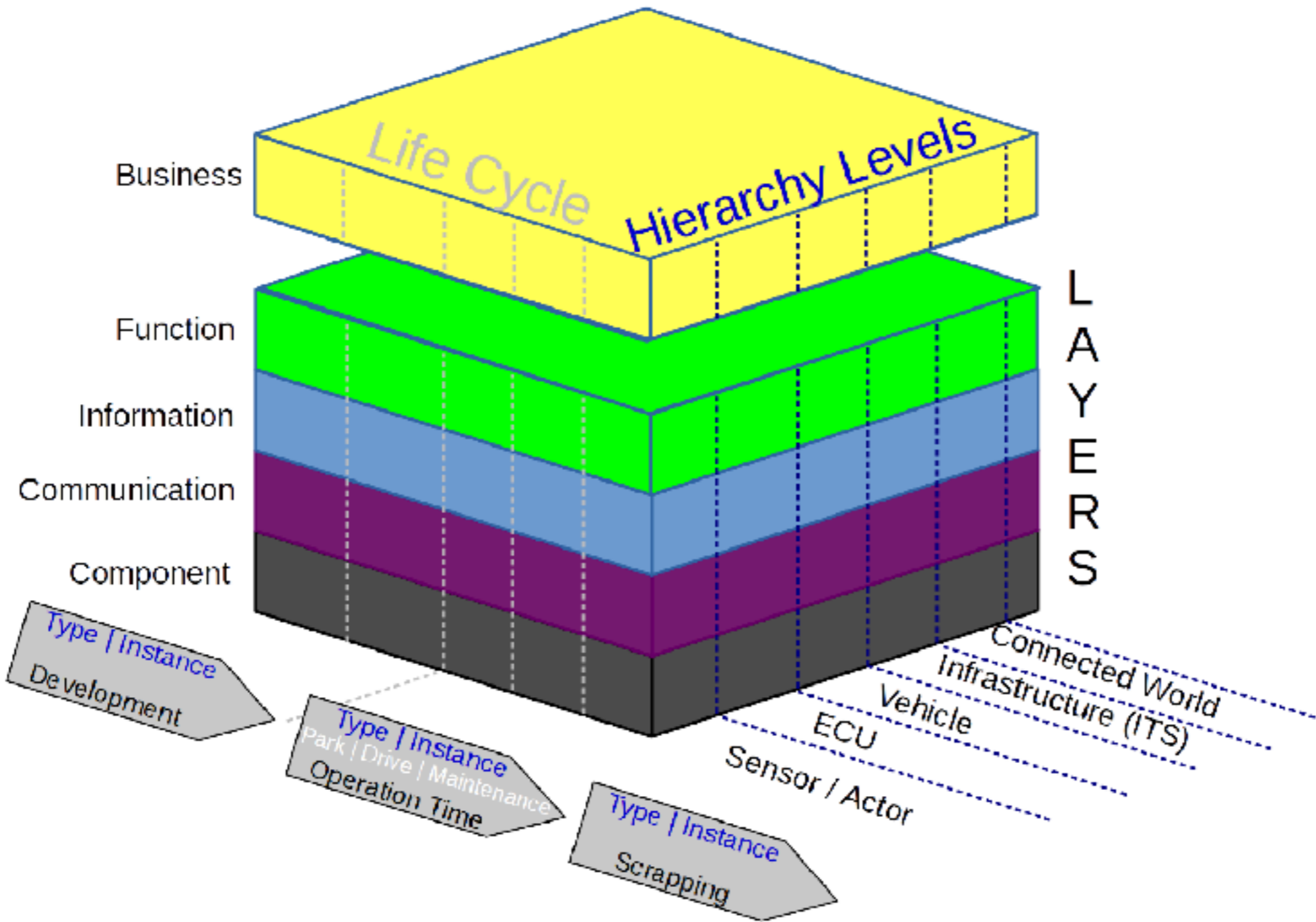


# Reference Architecture Model Automotive (RAMA)



## Layers:

- Business: Organization and business processes
- Function: Elementary function and composition of functions including functional dependencies (e.g., Electronic Stability Control (ESC), Adaptive Cruise Control (ACC))
- Information: Data (internal - and external vehicle data, e.g., from the backend)
- Communication: Communication channels and data flow
- Component: Physical components plus firmware

Life cycle:

- Development: Design and production including type-approval
- Operational time: Usage of vehicle
- Scrapping: End of live cycle. Scrapping can have different characteristics: Scrapping of a physical component of a vehicle, scrapping of the whole vehicle or only scrapping of vehicular data due to a selling of a vehicle.

## Hierarchy Levels:

- Sensor / Actor: This level refers to a individual sensor or actor or a collection of sensors and/or actors of a vehicle.
- ECU: Individual ECU or collection of ECUs.
- Vehicle: This refers to the complete IT of a vehicle including sensors, actors, ECUs, the internal networks and internal/external communication units.
- Infrastructure: A vehicle may interact locally with external components of the road side or maintenance infrastructure (or other vehicles), so this level covers all types of vehicle-to-X communication, e.g., at a garage.
- Connected world: This level covers all types of communication via internet including connections to the OEM backend or other services (maps, traffic info, etc.)