

# 1 Sensor System Architectures

## 1.1 Stationary Applications

The UMRR sensor family can be used for many stationary applications. Among those are:

- Surveillance systems
- Moving objects detection
- Traffic monitoring
- Traffic enforcement
- Rail applications

etc.

In a stationary application, usually the sensor output is a list of detected **targets** (reflectors) on the sensor CAN bus (referred to as *internal CAN*) with the parameters

- Range
- Angle (Position)
- Radial Speed
- Reflectivity level
- Type of Target (Reliability Figure).

In addition to that, status and diagnose data from the sensor are reported.

Usually the tracking (filtering and smoothing of all detected reflectors over time) is done in an additional unit (central ECU BUMPER-08xx or a PC or the like). If required, those tracking algorithms can also be integrated in the sensor.

The result of the tracking is an **object** list with the following parameters:

- x position
- y position
- x component of the velocity
- y component of the velocity
- type of reflector
- size of reflector.

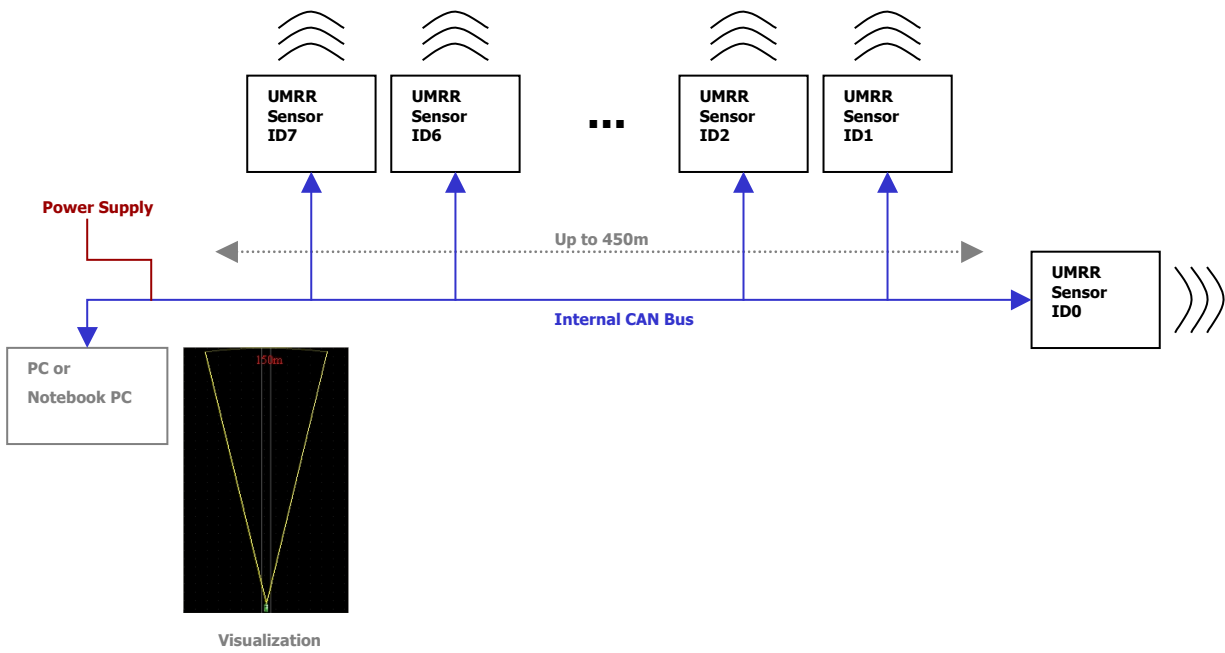
When multiple sensors are applied, the data fusion algorithms are typically run on the fusion PC or the fusion central ECU BUMPER08xx.

In any case, a visualization both of the **targets** and the **objects** is possible using the [DriveRecorder2 software](#) in any PC equipped with a CAN card.

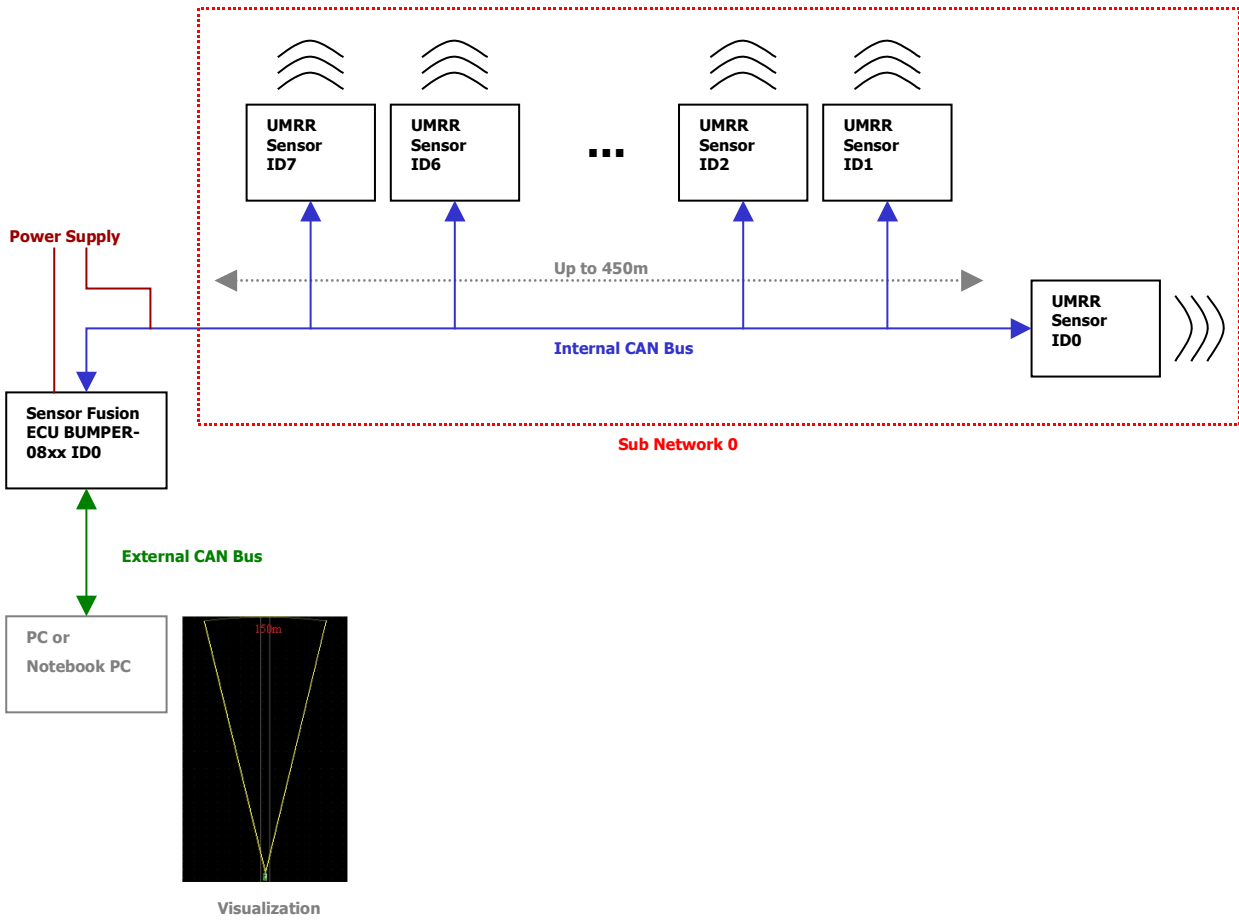
### 1.1.1 Stand Alone Sensor



### 1.1.2 Sensor Network



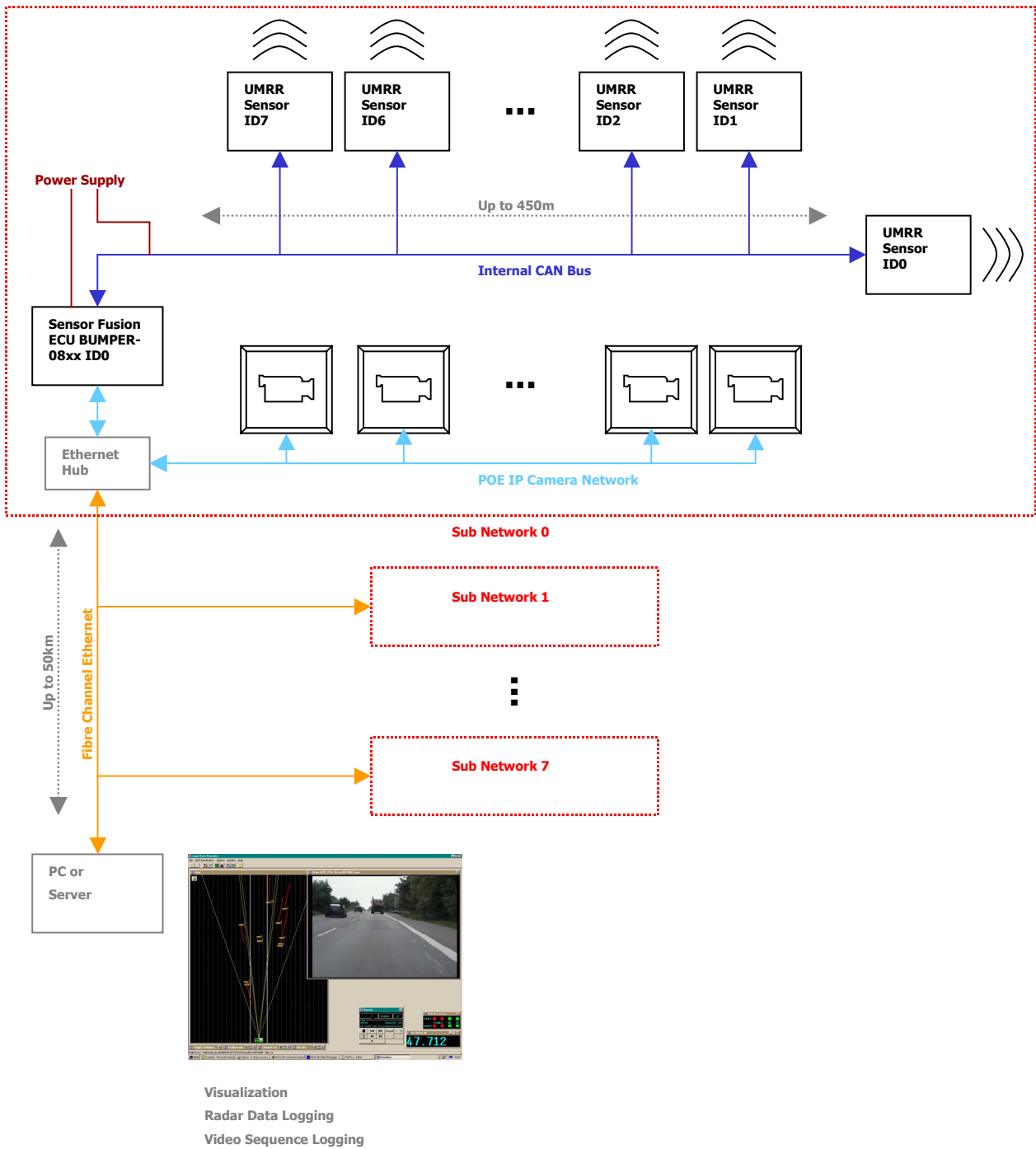
### 1.1.3 Sub Network



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### 1.1.4 Network of Sub Networks



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