



Innovation Lab.

Carpooling - E411

18/06/2019

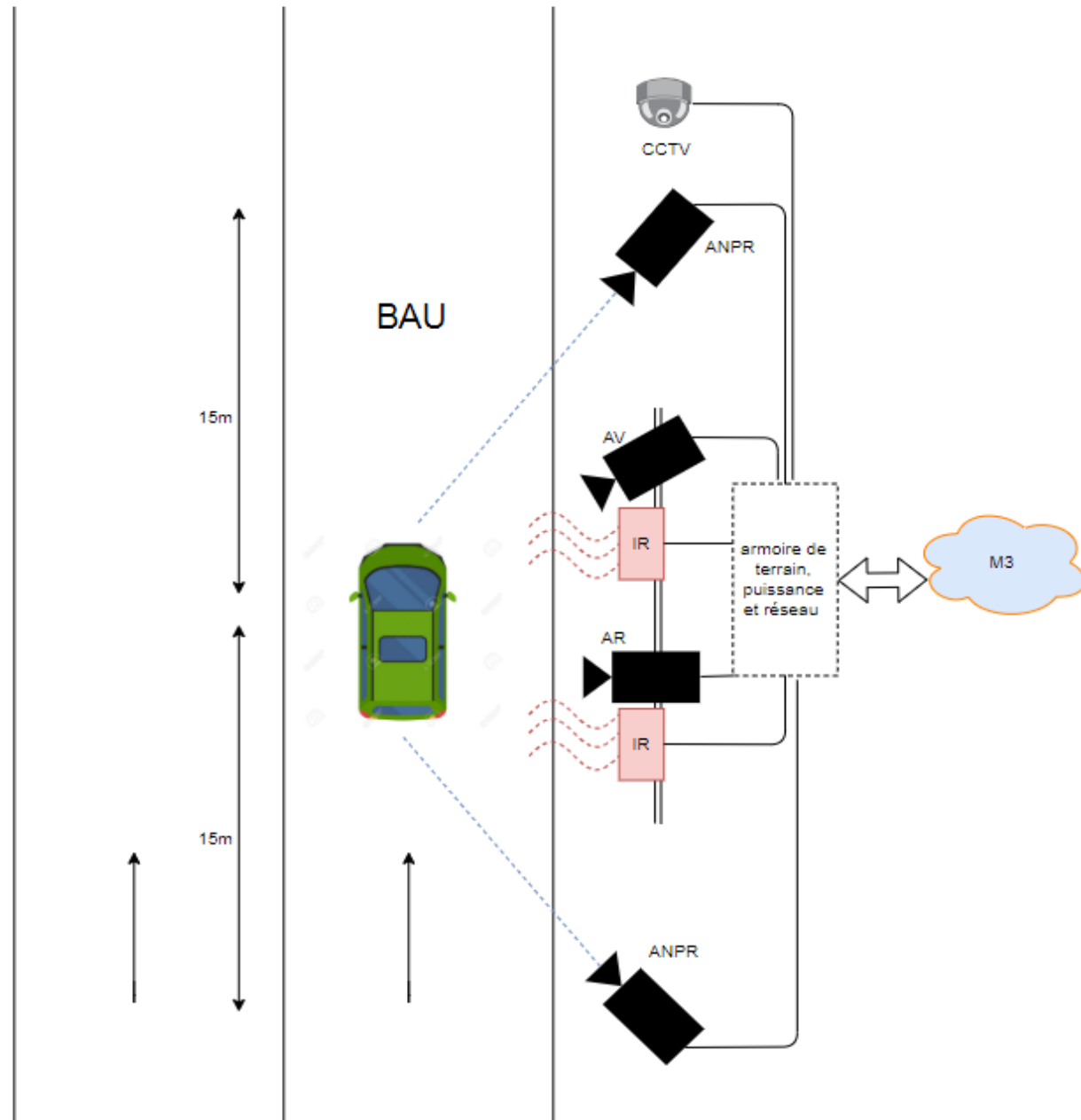
Mise en œuvre d'une infrastructures de contrôle du co-voiturage

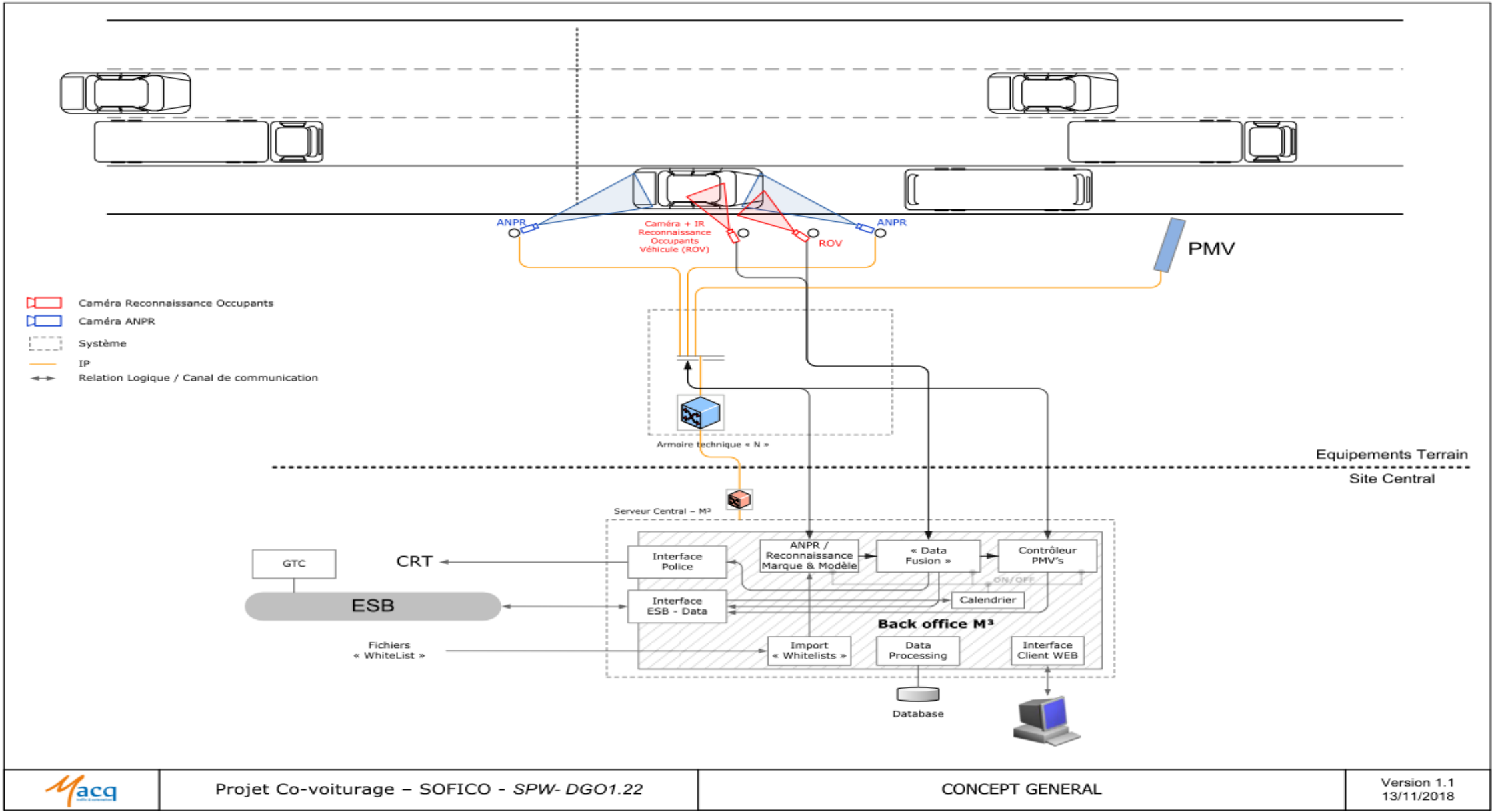
- **Présentation**
- Rappel du contexte
- Description des grandes phases du projet
- Identification et gestion des risques
- Planning



Site survey E411

📍 With the Macq Icar CAM 5P!





How to see into a car ?

- 💡 With a polarizing filter !
- 💡 Allows to better see the interior of the vehicle by removing reflection on the glass

Without filter



With filter



How to detect a **passenger**?

♀ With the Macq face detection !

Neural network used in Macq traffic products.



How to detect a passenger?

♀ With the Macq face detection !

Neural network used in Macq traffic products.



Workflow of car pooling **control**

- 💡 Vehicle detection with a **neural network** used by Macq traffic products in the CAM-5P
- 💡 Locating people into a vehicle thanks to **Face detection** in the CAM-5P
- 💡 Guarantee that a **passenger is counted only once by tracking** the vehicle in the CAM-5P
- 💡 Fusion of the result of the two CAM-5P in the "**data fusion**" module avoiding the double counting of one or the other passenger thanks to the **location of the passenger** in the vehicle and associating **the front and rear plate**



What is the Macq Icar CAM 5P ?

- Dual high-sensitivity, high-resolution polarized sensors (2464 Hpx × 2056 Vpx - B/W & Color)
- Vehicle speed detection from 0 to 250 km/h
- Weight: 3.8kg
- PSU: 12-24 Vdc
- Processor: NVIDIA JETSON TX2
- Operating temperature : -20°C +60°C
- Minimum IP67 protection (IP55 Arm Mechanism)
- WIFI, 3G/4G/GPS
- Motorized arm (tilt and pan)

Thanks!