

AVITRACK



Deliverable
D.1.3
Formalism for object
and scenario models

Abstract: This document presents the work concerning the AVITRACK formalism modules, which serve the 3D scene models and the apron's activities models.

1 Models representation issue

Universities, specialists of tracking and image interpretation, contribute to a complete definition of the formalisms for the model representation. Referring to their background know-how and to the envisaged method used for tracking, recognition and interpretation, research partners define the model's parameters.

The formalism concerns:

- Static or mobile objects,
- Rigid or bending objects,
- Characteristics for objects recognition,
- Operation representation,
- Movement and relative position description,
- 3D data scene,
- Individual and group Behaviour.

2 Formalism for object recognition

This work concerns the specification for the Model Representations of the 3D scene and objects of interest in the AVITRACK project.

The modeling method is based on points, facets and lines elements, is well suited for man-made environments such as the airport environment in AVITRACK.

3 Formalism for scene modelisation

A formalism describing the different knowledge files needed to process the understanding was build. The defined formalism will be used, all along the project, to enlarge the knowledge database.

The system needs several informations dedicated to:

- The empty scene description,
- A dynamic scene definition related to vehicles
- The expected objects definition
- The camera information

4 Formalism for activities recognition

The "handling activities" have to be modelised for their recognitions by the "understanding module".

In order to be incorporated in the artificial intelligence software for the automatic recognition of the operations, each activity has to be representing as a "scenario".

Finally, the generated scenarios will be process by the scenario recognition Motor (SMR) in the understanding module.

5 Conclusion

The formalism definition studies, the models creation and the future users of the models, reach to suitable and efficient specification, approved and used by all actors.