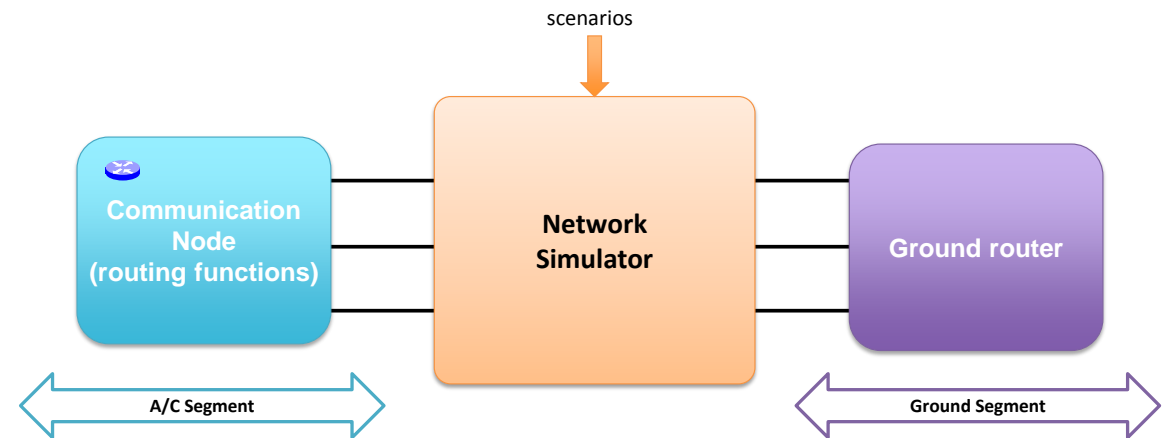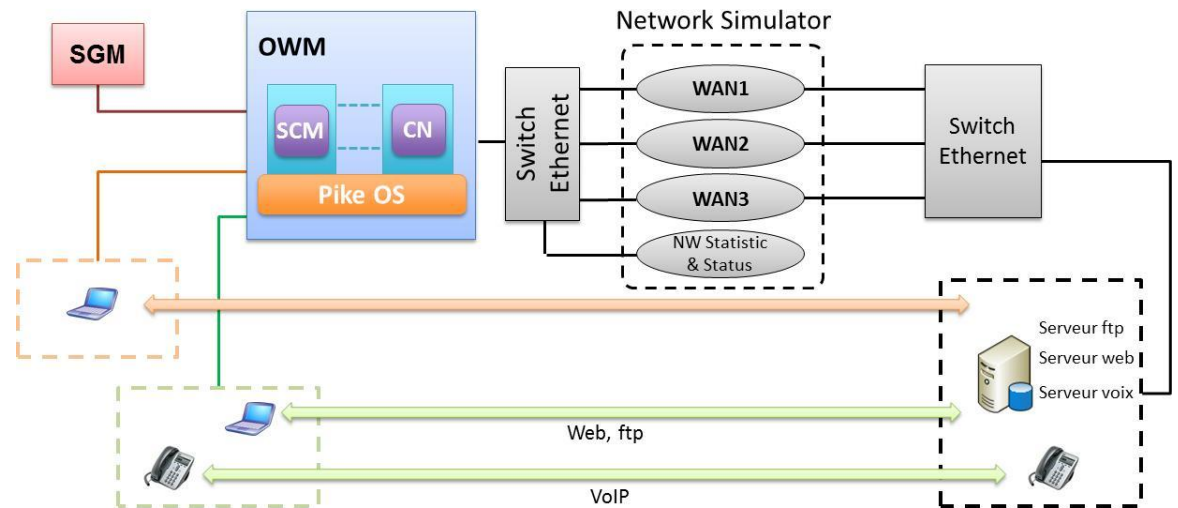# Communication Node

DASSAULT A V I A T I O N

Objectives

- To manage communications between aircraft and ground segments, as communication request could raise from various aircraft functional domains : ACD, OSD, Passengers domain.
- To perform the optimised use of available heterogeneous communication means (Satcom, wifi,…)
- To comply with the segregation requirements of data from different trusted domains
- To allocate communication means depending on:
  - The priority level of the communication request
  - The quality level of the expected communication service
  - The availability of the communication mean (depending on aircraft location…), and when available, its free bandwidth,
  - The cost of the communication service
  - The usage constraints of the communication mean

Exemple of test Scenario

Initial state, only a satellite communication is available;
An onboard client is downloading a big file, performed with best-effort resources, all the bandwidth being allocated;
Another onboard establish a connexion to a SIP server, the VoIP communication request is having a higher level class of service;
The downloading speeds down;
A more capacitive communication link becomes available (WiFi for instance), the two communications switch to this more capacitive communication link (WiFi) and the downloading speeds up.

SGM — OWM (SCM — CN — Pike OS) — Switch Ethernet — Network Simulator (WAN1, WAN2, WAN3, NW Statistic & Status) — Switch Ethernet — Serveur ftp / Serveur web / Serveur voix

Web, ftp
VoIP

scenarios

Communication Node (routing functions) — Network Simulator — Ground router

A/C Segment — Ground Segment

The network simulator :

- Can simulate three networks in parallel
- Can add defaults on networks : add jitter, delay, data packets lost…
- Can send information about network statistics to the SCM