COFDM Parameters for Standardisation
COFDM

- COFDM is a frequency-division multiplexing (FDM) scheme used as a digital multi-carrier modulation method.
- Large number of closely spaced orthogonal sub-carrier signals are used to carry data[1] on several parallel data streams or channels.
- Each sub-carrier is modulated with a conventional modulation scheme (such as quadrature amplitude modulation or phase-shift keying) at a low symbol rate, maintaining total data rates similar to conventional single-carrier modulation schemes in the same bandwidth.

Why do we talk about OFDM?

• **Today: OFDM is widely used in communications standards**
  
  **Wireless:**
  - Mobile telephony: LTE, LTE+, WiMAX
  - Mobile networking: IEEE802.11a/g/n
  - Broadcasting: DVB-T, DVB-H, DAB, DRM
  - ATM data links: L-DACS1, AeroMACS

  **Wired:**
  - Power-Line-Communication
  - Broadcasting: DVB-C2
COFDM parameters

- Bandwidth
- Number of subcarriers
- Intercarrier spacing
- Constellation
- Guard interval
- Frame length
- Synchronization: pilots
- Coding
COFDM : standard ?

- AIRBUS COFDM parameters configuration :
  - Adapted to aeronautical channel
  - Doppler : up to 1000 km/h
  - Multipath existing on Toulouse Airport

- The development has been made by Zodiac Data Systems

- The results are confidential

- Zodiac Data Systems must be included in the process
COFDM for Telemetry: a standard?