**Subject:** CHANNEL SHORTENING FOR OFDM IN DIGITAL COMMUNICATIONS

**Topics:**
I. TELECOMMUNICATION ET TECHNIQUES D’INFORMATIONS  
TELECOMMUNICATION AND INFORMATION TECHNOLOGY

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**Description:**
Most of modern digital communications are now based on OFDM. In such multicarrier modulation schemes, a guard interval longer than the delay spread of the channel is inserted at the beginning of each OFDM symbol in order to avoid interference.

On the one hand, the smaller the guard interval, the greater the spectral efficiency. In the other hand, when the channel spread is longer than the guard interval, as for example in some ultra large band contexts, drastic degradation can occur on the global error rate performance.

In the frame work of a Phd, we studied the opportunity of using channel shortening technics in order to reduce the guard interval size and thus to obtain a spectral efficiency gain and/or an improvement in the error rate performance.

We already obtained very good results on UWB or Adsl transmissions and have a lot of further studies to carry out in the framework of a postdoc integrating for example channel coding and MIMO systems.

**Our first published results on the subject:**


**Key words:**
Channel shortening, guard interval, OFDM…