

# THE PCDO A UNIQUE TOOL TO PROCESS DO ON DISTANT TELEMETRY STATIONS OF CSG LAUNCH BASE

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The Centre Spatial Guyanais Launch Base ground segment is composed of several tracking stations spread all around the world. The challenge of the tracking ground segment is to provide the best visibility of the launcher at all times no matter the launchers trajectories.

To reach continuity of the visibility of the launcher some stations have been deployed on isolated sites that have limited communications technology with respect to the needs for signal stability. Indeed, the transmission of the trajectory so called Designation d'Objectif (DO) must be performed in real-time so that every station can duly track the launcher during its pass. However, on isolated sites the signal may suffer from delays, distortion or loss.

To cope with these events, the French Centre National d'Etudes Spatiales has developed the PCDO, Poste de Calcul de la DO. The PCDO presents as a tool kit adaptable to any tracking station. Having a user-friendly MMI, the PCDO processes the DO received at the tracking station and sends the resulting signal to the Antenna Control Unit to allow for the tracking in input trajectory mode. The PCDO counters the potential real-time signal degradation that can occur at the tracking station. Among other capabilities it provides real-time synchronization of the trajectory by estimating and compensating the signal delay, it also offers the possibility to switch to a local trajectory as well as the filtering of signal spikes and data alteration due to the transmission channel.

This paper will introduce the CSG tracking ground segment used in the case of different launchers, the architecture of deployment of the PCDO at the station site, the main features offered by the tool kit as well as its potential evolutions in the near future.