

G.4 A Real-time Ionospheric Model

Larisa Lindsay (Larisa.Lindsay@DSTO.defence.gov.au)

200 Labs, Surveillance Systems Division, Defence Science and Technology Organization, Adelaide, South Australia

An accurate real-time model of the ionosphere is needed for coordinate registration of targets in an over-the-horizon radar. Day to day variability can be tracked both spatially and temporally. This is useful, not only for locating targets in ground coordinates, but for looking at real-time phenomena such as ionospheric storms and TIDs. A method for constructing a stable, accurate, real-time model of the ionosphere is presented. Ionograms were collected through a network of Vertical Incidence Sounders in the Northern Australian region in early December. This data was used as input for the model, creating a 4-dimensional map of ionospheric plasma frequency. Its accuracy can be gauged by comparing real oblique ionograms with synthetic obliques derived from the map. An animation of a selection of data from the real-time model is shown.