# TGSS products management system

N. G. Kantharia[1*], S. Teli,[1] T. Gonjari, S. K. Sirothia,[1]
C. H. Ishwara-Chandra[1] and Gopal-Krishna[2]

[1]*NCRA-TIFR, Pune 411007, India*
[2]*IUCAA, Pune 411007, India*

**Abstract.** A comprehensive data products management system to handle the products emerging from the TIFR GMRT Sky Survey has been developed. TPMS, as it is referred to allows viewing of field images and catalogues, running data quality checks and generating field-level and release-level statistics. It has also been programmed to generate a quality flag for each TGSS field based on several pre-defined tests thus automating and speeding up data quality checks. TPMS has been used for TGSS DR5.

TGSS is an all sky radio survey at 150 MHz using the GMRT covering the sky north of declination $-55°$ with an rms noise of $5 - 7$ mJy/beam and angular resolution of $\sim 20''$. When complete, the survey will consist of $\sim 5300$ fields and detect more than a million radio sources. Currently five data releases have made public a total of 558 fields containing $\sim 0.1$ million sources (http://tgss.ncra.tifr.res.in).

TPMS is designed to manage the TGSS products namely images, catalogues, data-editing summaries and observational details for the TGSS team (Fig 1). TPMS also makes available field snapshots, field/release level statistics and a quality factor for each field generated using pre-defined data quality checks on the products (Fig 2). The checks done by TPMS for each field include expected source counts, radial dependence of rms noise and median rms noise, fraction of bad data removed from the analysis and spectral index statistics by combining with the already available NRAO VLA Sky Survey (NVSS) catalogues at 1.4 GHz (Condon et al. 1998, Astron. Jour. 115, 1693). We plan to include a check based on the 2pt angular correlation function of radio sources for each TGSS field (Ocana et al. in this issue). We have found it to be a image quality indicator. The software has a web-based interface implemented using Java Server Pages (JSP) and HTML, a database using MySQL and the two connected by Java DataBase Connection (JDBC). Calculations, plotting, search for NVSS counterparts and contour plots for each field are implemented using gnuplot, SAO ds9,
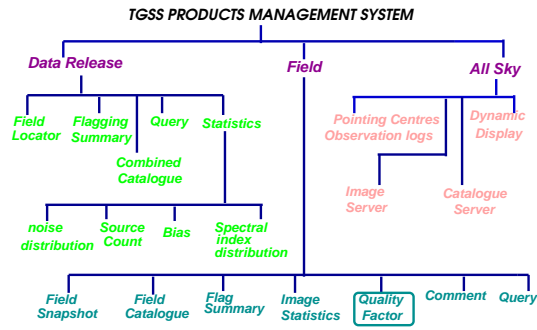
---

*email: ngk@ncra.tifr.res.in

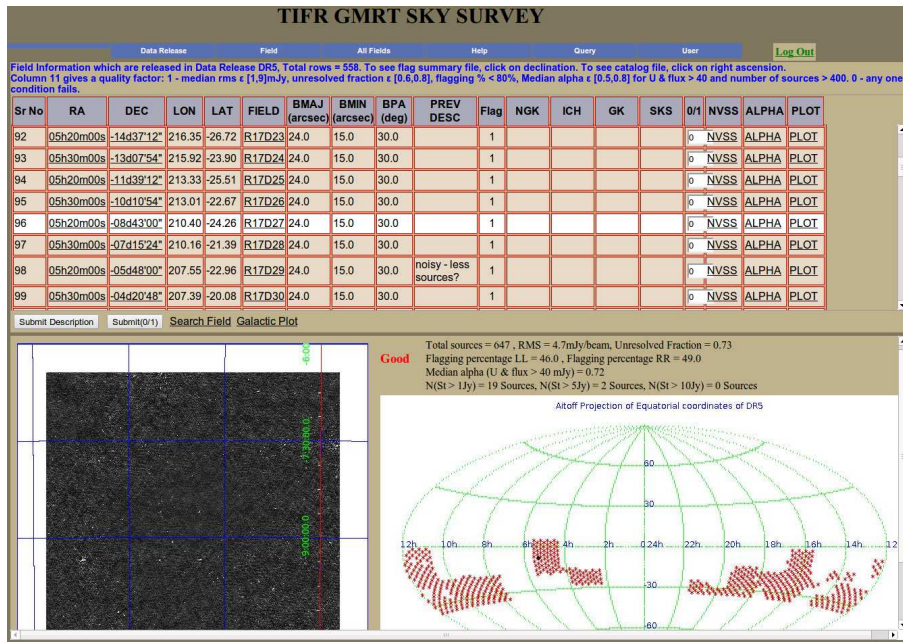**Figure 1.** Architectural design of TPMS.



**Figure 2.** A screenshot showing one of the TPMS tabs. This shows the image snapshot of the highlighted field R17D27 shown as a black dot in the Aitoff projection of the fields released in TGSS DR5. The results of the automated field-level quality checks are shown including the *GOOD* flag shown in red.

casapy and NVSSlist. TPMS was successfully used for conducting preliminary data quality checks on TGSS DR5 fields.