

# GSFC IVS Technology Development Center Report

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## Abstract

This report summarizes the activities of the GSFC IVS Technology Development Center for 2001. The report forecasts activities planned for the year 2002. The GSFC IVS Technology Development Center (TDC) develops station software including the Field System (FS), scheduling software (SKED), hardware including tools for station timing and meteorology, scheduling algorithms, operational procedures, and provides a pool of individuals to assist with station implementation, check-out, upgrades, and training.

## 1. Technology Center Activities

The GSFC IVS Technology Development Center (TDC) develops hardware, software, algorithms, and operational procedures. It provides manpower for station visits for training and upgrades. There are other technology development areas at GSFC covered by other IVS components such as the GSFC Analysis Center.

The current staff of the GSFC TDC consists of Nancy Vandenberg, Ed Himwich, Chuck Kodak, Raymond Gonzalez, and Willam Wildes.

The remainder of this report covers the status of the main areas of development that are currently being pursued.

## 2. Field System

During this period some new features were released in FS version 9.5:

1. support for K4 systems,
2. support for sequential use of two tape drives,
3. better handling of default values for Mark III/IV IF attenuators,
4. a utility "msg" for sending Ready, Start, and End messages for geodetic sessions,
5. support for logging maser offset data from a TAC,
6. support for NTP,
7. a command, "ifadjust" to automate determining the IF attenuator settings for a given mode,
8. an experimental tool for monitoring FS operation remotely, FSVUE,
9. a command, "tnx" to disable reporting of an error message that cannot be fixed, and
10. an experimental program, "erchk" to display only error messages to make it easier for the operator to keep track of them.

In the next FS release, 9.6, several other improvements are expected. Among these are: (1) dual head recording for Mark IV and VLBA4, (2) support for the new Mark IV firmware, (3) onsource flagging formatted in AIPS flagging file format, (4) improved Tsys measurements with automatically generated procedure files, frequency dependent noise diode temperatures, and ANTTAB file format output, (5) faster set-up when the formatter set-up doesn't change between scans, and (6) more extensive NTP support. The release is expected in the third quarter of 2002.

### 3. SKED and DRUDG

The GSFC Technology Development Center is responsible for development, maintenance, and documentation of the SKED and DRUDG programs. These two programs operate as a pair for preparation of the detailed observing schedule for a VLBI session and its proper execution in the field. In the normal data flow, first SKED is run at Operation Centers to make the .skd file that contains the full network observing schedule. Then the stations use the .skd file as input to DRUDG for making the control files and procedures for their station.

During 2001 SKED was maintained with bug fixes but no new development was made.

### 4. Meteorological Sensors

A recommendation for a new standard meteorological sensor will be made in 2002. The units are the Parascientific MET3 (pressure, temperature, and humidity) and Vaisala WAS425 (wind sensor). These were chosen for compatibility with existing GPS instrumentation. They will be supported by the FS.