

# Data Analysis Working Group (DA-WG) 2017-2018 report

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# Strategic goal

- Optimisation of RST
  - refactoring – done
  - regular release production process has started
    - working out testing and approval principles and procedures
    - need to optimise version control principles
  - algorithm optimisation
    - FITACF – essentially done
    - gridding and mapping – just started

# RST 4.1 (released 9 Jan 2018)

## New Features:

- FITACF 3.0 (optional)
- Chisham virtual height model (optional)
- PSR10 and CS10 statistical convection models
  - CS10 replacing RG96 as default
- AACGM-v2 coefficients now used by default
- Revisions to gridding software
  - slant range rather than range gate filtering option + bug fixes
- Revisions to Map Potential software
  - use of IGRF-12 instead of dipole B-field + bug fixes

# RST 4.1 (cont.)

## Other Changes:

- Deprecation of “-new” flag for dmap format files
- Cleanup of numerous warning messages during compilation
- Further improvements to html documentation
- Updated compilation process
- Implemented command line option error handling for several binaries
- Introduced automatic compilation testing on github for Linux systems (Travis-CI)

# RST 4.1 (cont.)

## Development Since RST 4.0:

- 366 commits
- 30 pull requests approved
- 862 files changed
- 59,445 additions (ie lines)
- 36,738 deletions (ie lines)
- 7 contributors
  - doesn't include testers or approvers of pull requests

# RST 4.2 (release TBD)

## New Features:

- TS18 and TS18-Kp statistical convection models
  - TS18 replacing CS10 as default
- Statistical convection model solver
- FITACF3 as default fitting routine
- Shepherd [2017] elevation angle algorithm
- Reintroduction of BAS meteor\_proc software

Plus huge amount of bug fixes, extra documentation, updates to hdw files, and general clean-up of institution specific software.

**Thanks to the Team!**