SFC : Solar and magnetic Forecast Center

SDA for ESA Space Weather Applications Pilot Project

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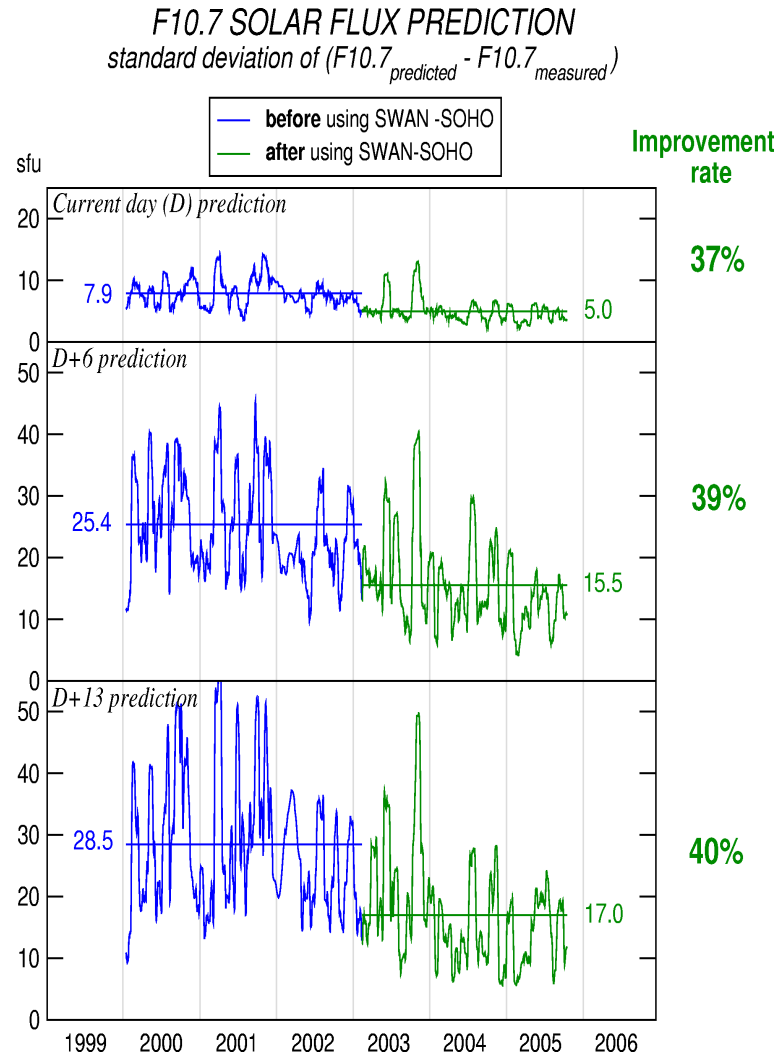
Summary of the objectives

- The main objectives are to provide forecast of solar and magnetic indexes (F10.7, Kp, AA…) as inputs for LEO satellites orbit computations. Prediction up to 14 days

- Operational service, 365 days a year, a forecast team of 6 persons



Summary of the user needs

- Users need solar and magnetic indexes for the computation of the air drag force on the LEO satellites (DTM, MSIS thermospheric models)

- Users are CLS (ARGOS system, NOAA satellites), CNES, GFZ (ERS)

- *Miscellaneous: ELTA, SEC/Boulder, (Ex-)Dassault, radio ham*

Evaluation of user satisfaction

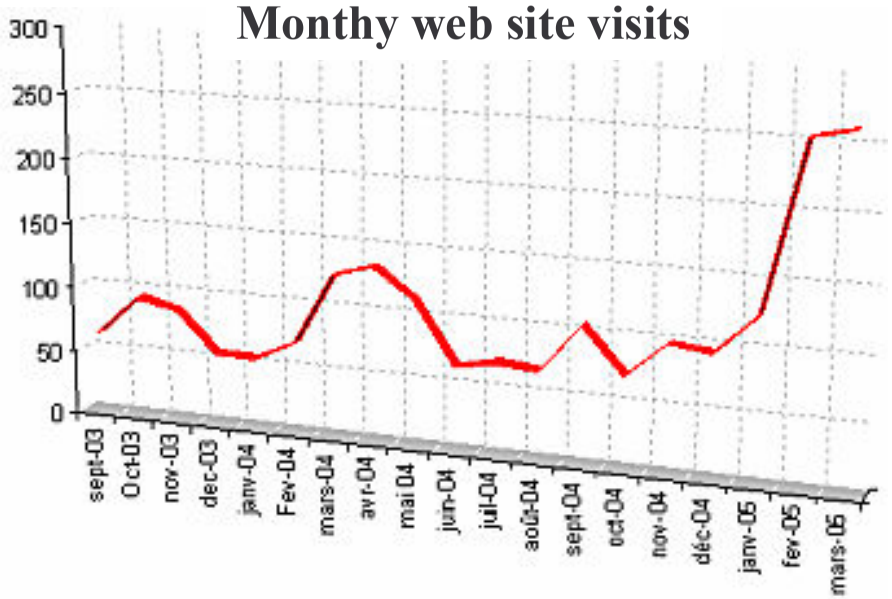
- Fully satisfaction for the service availability (100% over 5 yrs) and on time delivery 14h UT (> 98%)

  (A user reports that automatic procedures based on another forecast service have faced 4 days with delivery delays in October 2005 implying manual runs)

- In case of magnetic storms, accuracy of the predicted satellite ephemerides is lower due to thermosphere model imperfections. Not critical for the satellite missions

http://www.cls.fr/previsol

Monthy web site visits



sustainability of the service & business plan

http://www.cls.fr/previsol

Non-reccurring cost	Keuros
New indexes	25
CME & storm predictions…	25
Material	6
total	56
Recurring cost /yr	
Operational	30
Management	15
total	45
Service price /yr	10
Added value products	X
Total market in 2010	50-100

Prospective for improvement of the service

- Collaborations with scientific labs for new models

  - Laboratoire d'Aéronomie, CNRS : SWAN/SOHO ½ solar rev. forecast

  - Institut d'Astrophysique Spatiale, IAS/CNRS : Stereo mission for solar surface 3D structures evolution and CMEs prediction

  - LEGOS/CNES, CETP, LPG/CNRS and Prague Univ. : thermospheric model improvements and new index (sectorial magnetic index, Mg II…)

- CLS may give support for operations 24h a day, 365 days a yr, for backups, archives…