

Herstmonceux/Bern Timebias Service

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Predictions have improved enormously

- More normal points more quickly
 - Hourly data deposits and availability
- Better modelling
 - Better gravity field, better drag
- More frequent prediction computation and distribution
 - Now daily/sub-daily not weekly/monthly
- Why do we still need TB corrections?

Timebiases useful for:

- Low-flying satellites (CHAMP, GRACE)
- Manoeuvred satellites
- Weekly/monthly predictions sets

Herstmonceux TB calculations

- All global normal point data retrieved every hour
+ local pass data + direct CHAMP/GRACE data
- TBFs recomputed every 15 minutes for all satellites and all prediction sets
- Whole process fully automated, including installation of new predictions
- Easy to add new satellites, prediction centres

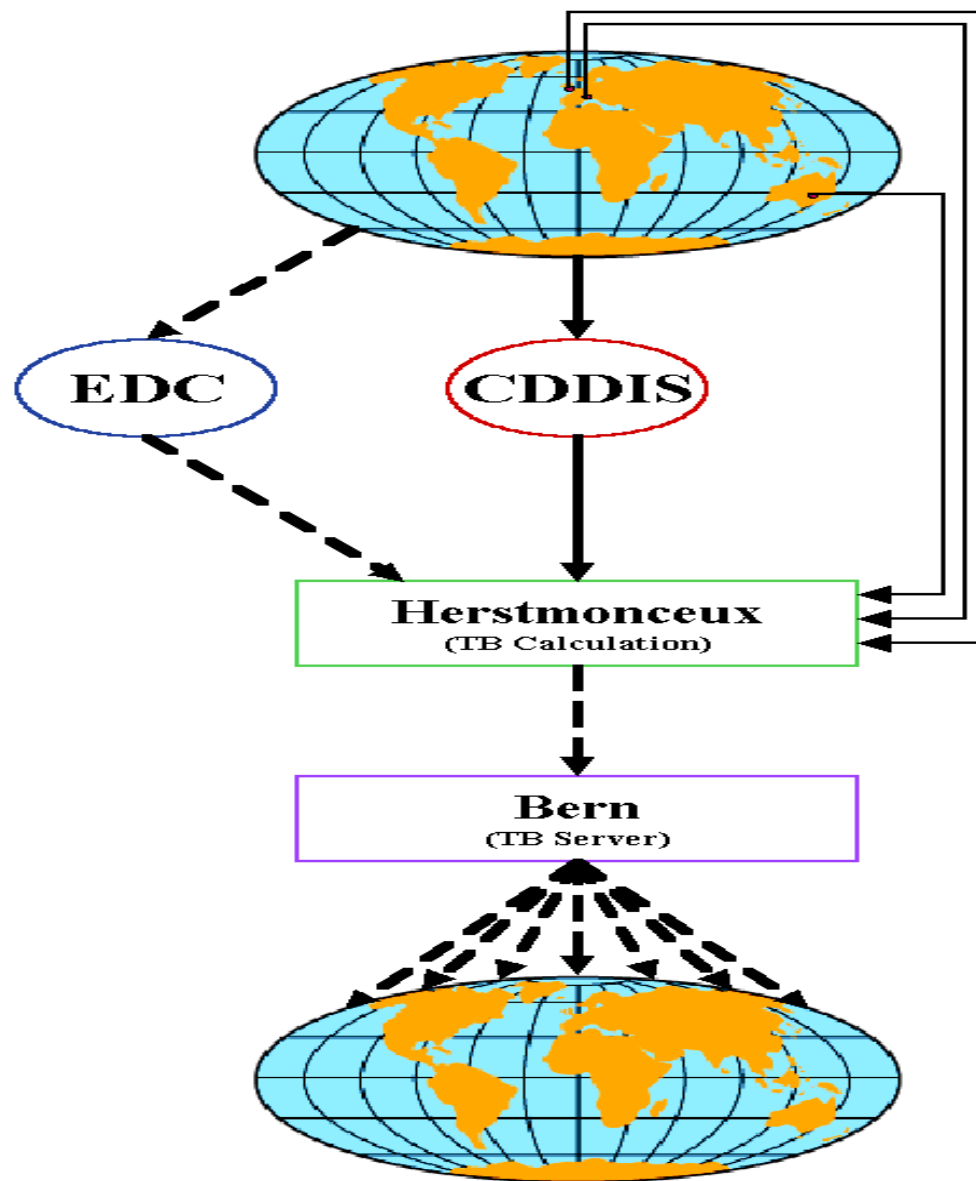
Bern Timebias server

- Herstmonceux TBFs downloaded by FTP every 15 minutes
- User connects to Bern server via TCP/IP
- Current TB values computed for all satellites and all prediction sets
- List of current TB values returned to user
- See example file

Example of instantaneous TB file

```
!           Time biases at 20-Sep-2002 10:12 UT
!
! Satellite      Total IRVset LstObs Passes SIC Drag
!               TB[ms]          [hhh:mm] used      [ms]
!
!           !
Ajisai          -1 HON262    2:46    44 1500    0
Ajisai           2 NSD082    2:46    44 1500    0
Ajisai          28 RGO100    2:46   167 1500    0
BeaconC          3 HON262    2:46    23 0317    0
BeaconC        2371 RGO047    2:46   104 0317    0
Champ          -115 GFZ818    0:00     0 8002  -115
ERS2            194 GFZ429    3:58   110 6178    0
ERS2            -30 HON262    3:58    17 6178    0
Envisat         26 ESO262    4:41    20 6179    0
Etalon1         28 HON262   16:55     6 0525    0
Etalon1         -4 RGO024   16:55    34 0525    0
Etalon2        -15 HON262   18:22     4 4146    0
Etalon2        -49 RGO024   18:22    43 4146    0
GFO1            -13 HON262    3:58    17 8501    0
GFO1             21 RGO111    3:58    48 8501    0
```

. . .



EUROLAS Near Realtime status display

- European status exchange via Bern server
- Stations display status every 15-30 seconds during pass
- Includes current timebias correction
- See example

Example of Near Realtime Status

```
Grasse_slr      2000-11-04 20:06:25  ERS2          CUR          0  gfz271  0.000
!-----*
Grasse_slr      2000-11-04 20:07:15  ERS2          CUR         35  gfz271  0.095
!-----*
Grasse_slr      2000-11-04 20:09:48  ERS2          CUR        213  gfz271  0.091
!-----*
Grasse_slr      2000-11-04 21:40:06  ERS2          CUR          0  gfz271  0.090
Herstmonceux    2000-11-04 21:40:43  Lageos1       CUR        277  HON309 -0.001
!-----*
Grasse_slr      2000-11-04 21:40:31  ERS2          CUR         32  gfz271  0.099
Herstmonceux    2000-11-04 21:41:03  Lageos1       CUR        300  HON309 -0.001
!-----*
Grasse_slr      2000-11-04 21:43:24  ERS2          CUR        559  gfz271  0.099
Herstmonceux    2000-11-04 21:43:47  ERS2          CUR          0  GFZ271  0.068
!-----*
Grasse_slr      2000-11-04 21:43:24  ERS2          CUR        559  gfz271  0.099
Herstmonceux    2000-11-04 21:44:07  ERS2          CUR          0  GFZ271  0.100
!-----*
Grasse_slr      2000-11-04 21:43:49  ERS2          CUR        576  gfz271  0.099
Herstmonceux    2000-11-04 21:44:27  ERS2          CUR         14  GFZ271  0.100
!-----*
Grasse_slr      2000-11-04 21:49:27  ERS2          LST        633  gfz271  0.099
Herstmonceux    2000-11-04 21:49:44  ERS2          LST        409  GFZ271  0.099
```

Future/Conclusions

- TB Service will supply TBs for previous prediction sets to overcome synchronisation problems at stations
- Timebiases will continue to be useful
- Encourage **all stations** to access TB service to investigate the benefits
- Perhaps this is a model for future predictions distribution?