

# *Near-Real-Time Status Exchange*



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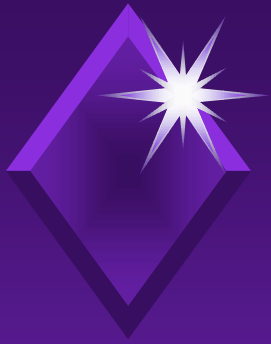
## *Status Exchange*

```
-----  
Graz          2002-08-13 14:17:32  Glonass87  LST          0  HON224  0.000  
Potsdam      2002-08-13 14:18:01           OUT  
Zimmerwald   2002-08-13 14:18:48  Glonass87  CUR          0  COD791  0.000  
Wetzell      2002-08-13 14:18:41           OUT  (Tracking Idle)  
Grasse_slr   2002-08-13 14:06:10  Lageos2    LST        653  NER022  0.002  
Herstmonceux 2002-08-13 14:18:26           OUT  
Ajaccio_ftlr 2002-08-13 13:59:00           OUT  
-----
```



## *Mode of Operation*

- ◆ Each actively participation station
  - ◆ Generates status record
  - ◆ Sends status record to central server
- ◆ Server
  - ◆ Collects status records from all stations
  - ◆ Re-sends to each stations all records
- ◆ Each (active and passive) station
  - ◆ Receives all status records
  - ◆ Displays all status recores
- ◆ Update cycle
  - ◆ Individual for each stations
  - ◆ Recommended: 15 seconds



# *Status Record*

Yarragadee    2004-05-28 15:19:19    Lageos-2    CUR    2151    HON148    0.000

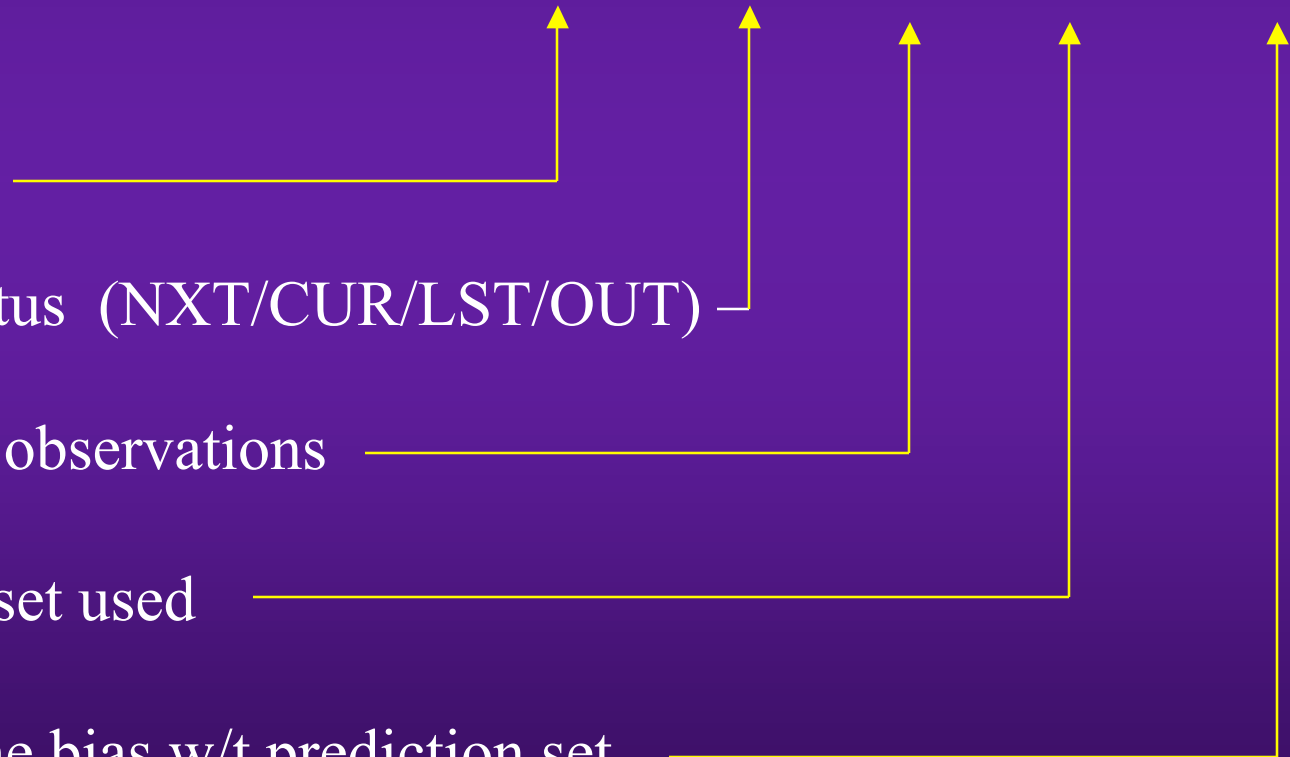
Satellite

Current status (NXT/CUR/LST/OUT)

Number of observations

Prediction set used

Current time bias w/t prediction set

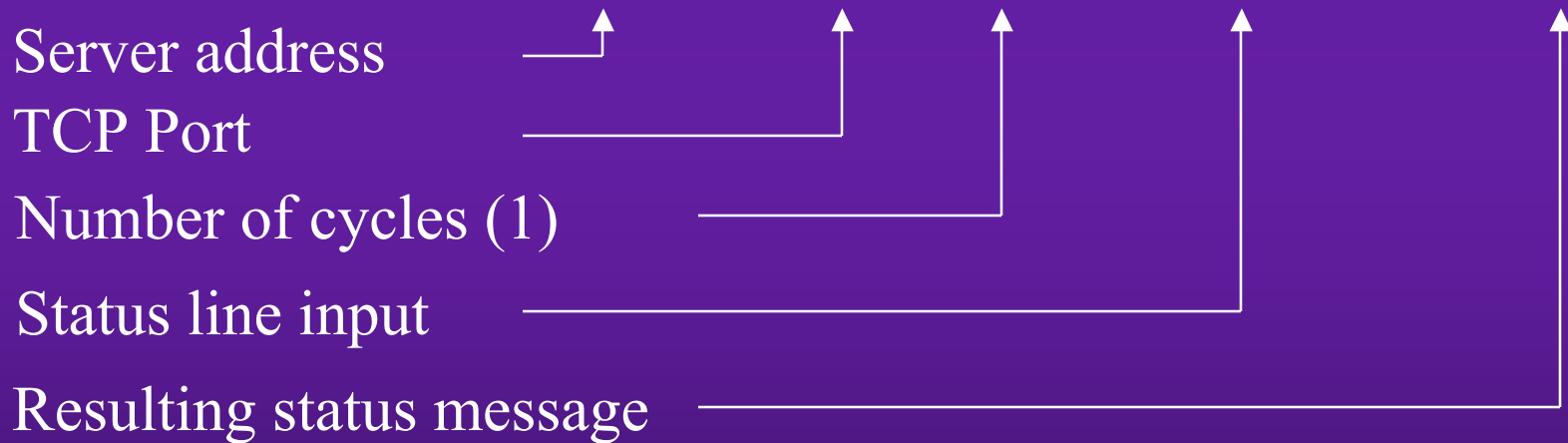




## *Transmission of Status Record*

- ◆ Use of given C-program `eurostat.c`

```
eurostat aiuas3.unibe.ch 7810 'n' [<infile] [>outfile]
```



- ◆ Use of an own program
  - ◆ Connect to remote TCP port, send/receive message



## *Passive Use*

- ◆ Download and continuously display status message

```
telnet remote_address port
```

```
telnet aiuas3.unibe.ch 7810
```

- ◆ One-time display using web browser

```
http://aiuas3.unibe.ch/cgi-bin/cgi-eurostat
```



## *Message Exchange*

- ◆ In addition to status record
- ◆ Client sends message string
- ◆ Starts with “!”

**! This is a message record**

- ◆ Server appends message to status records
- ◆ One message per client at a time



## *Applications*

- ◆ Display/exchange of real-time-determined time bias
  - ◆ Difficult satellites
  - ◆ Post-maneuver acquisition
- ◆ Tracking optimization
  - ◆ Selection of satellite to track depending on current tracking of other stations nearby
- ◆ (Message exchange)
- ◆ Improves the corporate feeling





## *Experiences*

- ◆ Well-received by the stations that actually use it  
Grasse FTLRS, Graz, Herstmonceux, Potsdam, Wetzell, Yarragadee, Zimmerwald
- ◆ They regret that not more stations do participate
- ◆ Helpful for  
Champ, Grace, Gfo-1, Envisat, ERS2, Topex, Jason-1  
particularly around maneuver time
- ◆ More aware of what's happening in the network
- ◆ Towards a more real-time-oriented mode of operation



## *Recommendations*

- ◆ All stations should use the same IRV sets
- ◆ Improve reliability of displayed time biases
- ◆ Time bias of difficult satellites to remain displayed for some time
- ◆ All stations should join
- ◆ See

<ftp://ftp.unibe.ch/aiub/slr/eurostat.txt>