

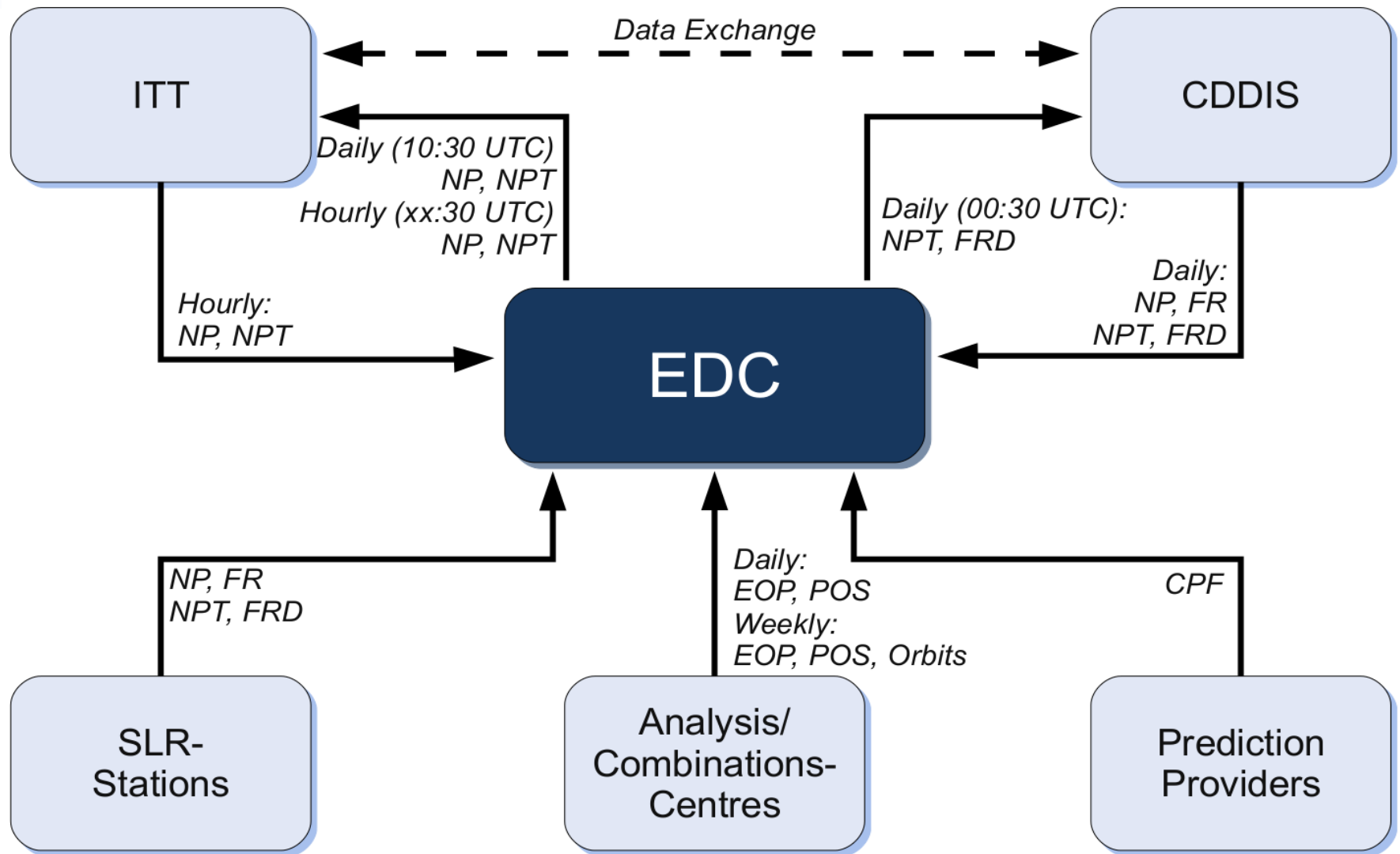
ILRS data Quality Control and Data Flow

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Unified Analysis Workshop 2011, Zürich, Sep. 16/17 2011

data flow to EDC



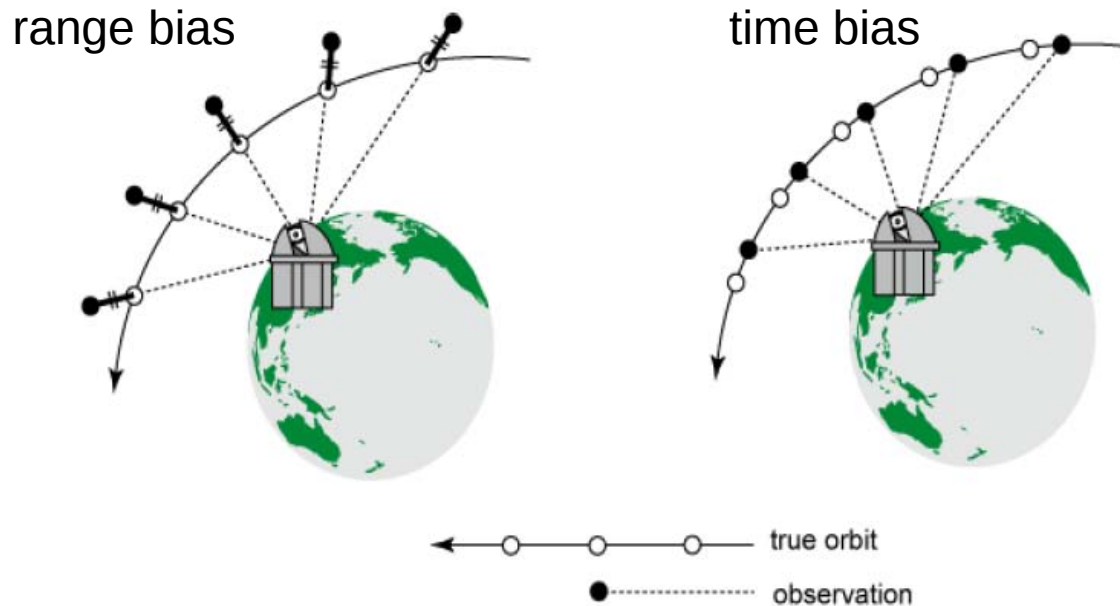
ILRS Combined products

- Daily and weekly solutions for EOPs and station positions
- Weekly combined orbits (Lageos1/2 and Etalon1/2)
- Two combination centres (ASI-ILRSA, JCET-ILRSB)
 - ILRSA official solution
 - ILRSB for comparison and validation
- Combination of individual solutions from presently 9 analysis centres (ASI, BKG, DGFI, ESA, GA, GFZ, GRGS, JCET, NSGF)
 - New candidates must pass a benchmark test

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Biases

Noise of SLR data is in general small (kHz-Systems)
But systematic errors (biases) are more critical



Quality control of SLR data

- permanent control of tracking data (daily)
 - Daily bias reports, including a summary report
 - new rapid service mail for instant station feed back
 - new stations and stations with major updates must pass a quarantine period
- Quarterly global report cards available from ILRS
 - Data volume of all SLR stations
 - Data quality
 - Analysis results from QL analysis centres
 - Lageos NP RMS
 - Short and long term stability
 - Percentage of good Lageos NP

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ILRS Combined Range Bias Report (AIUB)

7824 SFEL San Fernando						DGFI		MCC		HIT-U		SAO		JCET	
			sat	wl		rb	pr	rb	pr	rb	pr	rb	pr	rb	pr
7824	2011-09-02	01:05	LAG1	532		-26	7			-15	6				
7824	2011-09-03	15:40	LAG2	532		11	0			*	*			*	*
7824	2011-09-04	17:45	LAG2	532		-2	3			-17	2			-20	7
7824	2011-09-05	22:52	LAG1	532		12	2			23	1			3	3
7824	2011-09-06	02:28	LAG1	532		8	7			19	7			8	6
7824	2011-09-06	21:32	LAG1	532		3	3			-16	3			-54	3
7824	2011-09-07	01:02	LAG1	532		-24	6			-19	3			-14	5
7824	2011-09-07	04:26	LAG1	532		-9	5			-7	4			-17	4
7824	2011-09-07	08:13	LAG1	532		24	4			2	4			-7	4
7824	2011-09-07	20:15	LAG1	532		-16	3			-5	3			-21	4
7824	2011-09-07	23:41	LAG1	532		-22	7			-31	6			-12	2
7824	2011-09-08	03:14	LAG1	532		-11	5			-8	4			16	4
7824	2011-09-08	22:47	LAG1	532		-8	10			-12	7			-9	12
7824	2011-09-09	21:13	LAG1	532		-16	8			-2	7			19	5
7824	2011-09-10	19:40	LAG1	532		-22	4			-7	3			-8	4
7824	Average			532		-6	4			-6	4			-8	4

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DGFI Bias Report

Station	year	mm	dd	hh	mm	range-bias [cm]	sigma [cm]	prec.est. [cm]	no of observations	edit.	time-bias [microsec.]	sigma
Altai Mt	2011	9	8	18:49	:	-27.47	-2.75	0.00	5	5		1879
Altai Mt	2011	9	9	13:31	:	-6.49	0.79	5.46	4	0		1879
Altai Mt	2011	9	9	20:50	:	12.15	0.79	0.14	4	0		1879
Altai Mt	2011	9	10	15:39	:	-7.60	0.87	3.96	8	3		1879
Altai Mt	2011	9	10	23:03	:	28.83	2.88	0.00	5	5		1879
Riga	2011	9	4	01:30	:	1.56	0.93	1.21	11	0		1884
Riga	2011	9	4	20:37	:	-2.52	0.57	0.78	14	0		1884
Riga	2011	9	6	21:26	:	-1.99	0.35	1.21	14	0	8.80	2.45 1884
Wettzell	2011	9	11	09:43	:	-1.37	0.78	0.22	11	0		8834
Wettzell	2011	9	12	01:29	:	1.75	1.32	0.06	4	0		8834
Simeiz	2011	9	4	20:44	:	-9.64	2.71	1.97	5	2	1991.70	23.29 1873
Simeiz	2011	9	5	00:07	:	4.23	2.84	4.59	8	1	1219.00	14.84 1873
Simeiz	2011	9	7	20:19	:	10.03	2.79	5.06	7	4	2083.50	26.50 1873
Komsomol	2011	9	4	13:27	:	-21.94	2.65	0.65	7	0		1868
Komsomol	2011	9	4	17:02	:	23.67	2.76	1.64	6	0		1868
Komsomol	2011	9	8	14:52	:	7.31	2.00	1.25	8	0	-12.00	3.81 1868
San Juan	2011	9	5	01:07	:	-1.73	0.30	0.40	16	0	-12.00	3.84 7406
San Juan	2011	9	5	05:10	:	-2.65	2.86	1.53	3	0		7406
San Juan	2011	9	5	23:53	:	-1.16	0.75	0.69	12	0	-11.00	2.74 7406
San Juan	2011	9	6	03:33	:	-1.73	1.10	0.41	14	0	-18.00	5.40 7406
San Juan	2011	9	7	01:56	:	-2.92	0.43	0.51	10	0	-16.00	2.78 7406
San Juan	2011	9	8	00:43	:	-0.82	0.37	0.87	10	0	-17.00	2.89 7406
San Juan	2011	9	8	04:26	:	0.16	1.05	0.82	4	0		7406
San Juan	2011	9	10	01:42	:	-2.35	0.71	0.35	9	0	-16.00	5.02 7406
San Juan	2011	9	11	03:47	:	0.50	1.12	0.77	10	0	-40.00	6.28 7406
San Juan	2011	9	12	02:15	:	1.06	1.57	0.40	15	0	-34.00	9.38 7406
Golosiiv	2011	9	5	19:27	:	2.71	0.88	1.21	5	1		1824
Golosiiv	2011	9	5	22:44	:	2.43	0.52	1.20	9	0	-12.00	2.73 1824
Golosiiv	2011	9	6	17:58	:	0.03	0.84	1.76	5	0		1824
Golosiiv	2011	9	11	18:17	:	-5.07	1.50	1.44	6	0		1824
Golosiiv	2011	9	11	21:34	:	0.35	0.86	1.32	8	0	-16.00	3.40 1824

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Rapid Service Mail

Rapid Service Mail

- Established after Bad Koetzing AWG-meeting, May 2011
- Presently 9 messages to stations (HITU,DGFI)
- 3 responses from stations

Available from:

<http://rapidservicemail.dgfi.badw.de/>

and via mailing list maintained by DGFI (mailman)

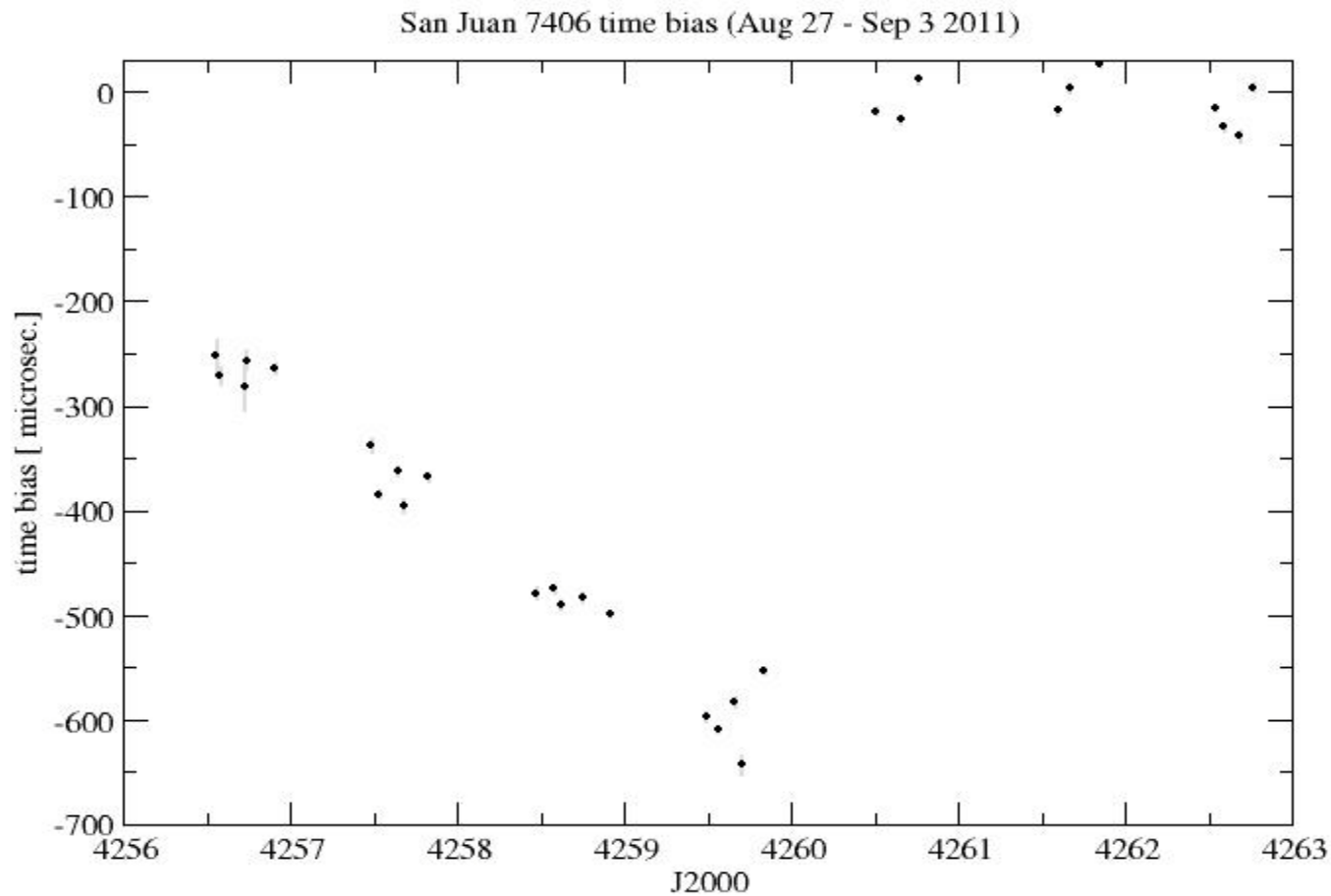
Header:

```
*****  
ILRS/AWG Rapid Service Mail (HITU) 7406 up to 0.5 ms time bias Message No. 0006  
*****
```



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San Juan time bias



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SLR-Discontinuities and ILRS Data-Handling files

- SLR_Discontinuities - manage solution numbers
 - Including solution numbers from ITRF solution
- SLR_Data_Handling – recommendations of ILRS/AWG how to handle SLR data, biases, editing periods, ..
 - updated regularly
 - mandatory for analysts

```
*-----
* list of sites with mandatory arc dependent biases to be estimated
*-----
1864 --- mm A 00:000:00000 00:000:00000 E
1868 --- mm A 00:000:00000 00:000:00000 E
1953 --- mm A 00:000:00000 00:000:00000 E
7548 --- mm A 00:000:00000 00:000:00000 E
7308 --- mm A 00:000:00000 00:000:00000 E
7810 --- mm B 00:000:00000 00:000:00000 E Infrared only
7845 --- mm A 00:000:00000 00:000:00000 E
7403 --- ms A 10:265:00000 00:000:00000 E small remaining rb
8834 --- mm A 09:050:00000 00:000:00000 E laser problems
```

- Sinex type files are available from DGFI ILRS
pages.http://ilrs.dgfi.badw.de/data_handling/ or linked from ILRS-Webpages

