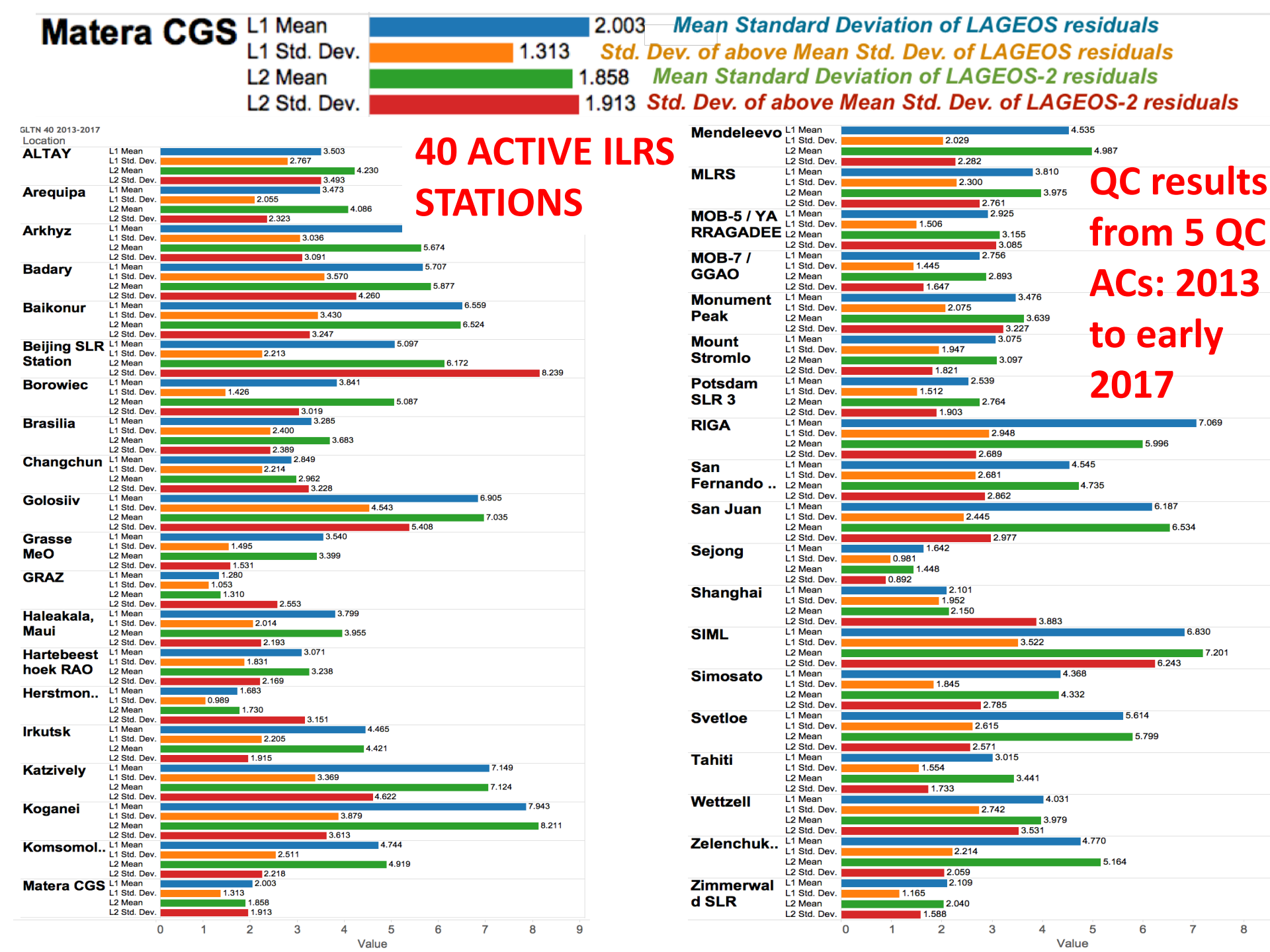
2017 ILRS Technical Workshop Riga, Latvia

Session 2: How do we evaluate our current performance?

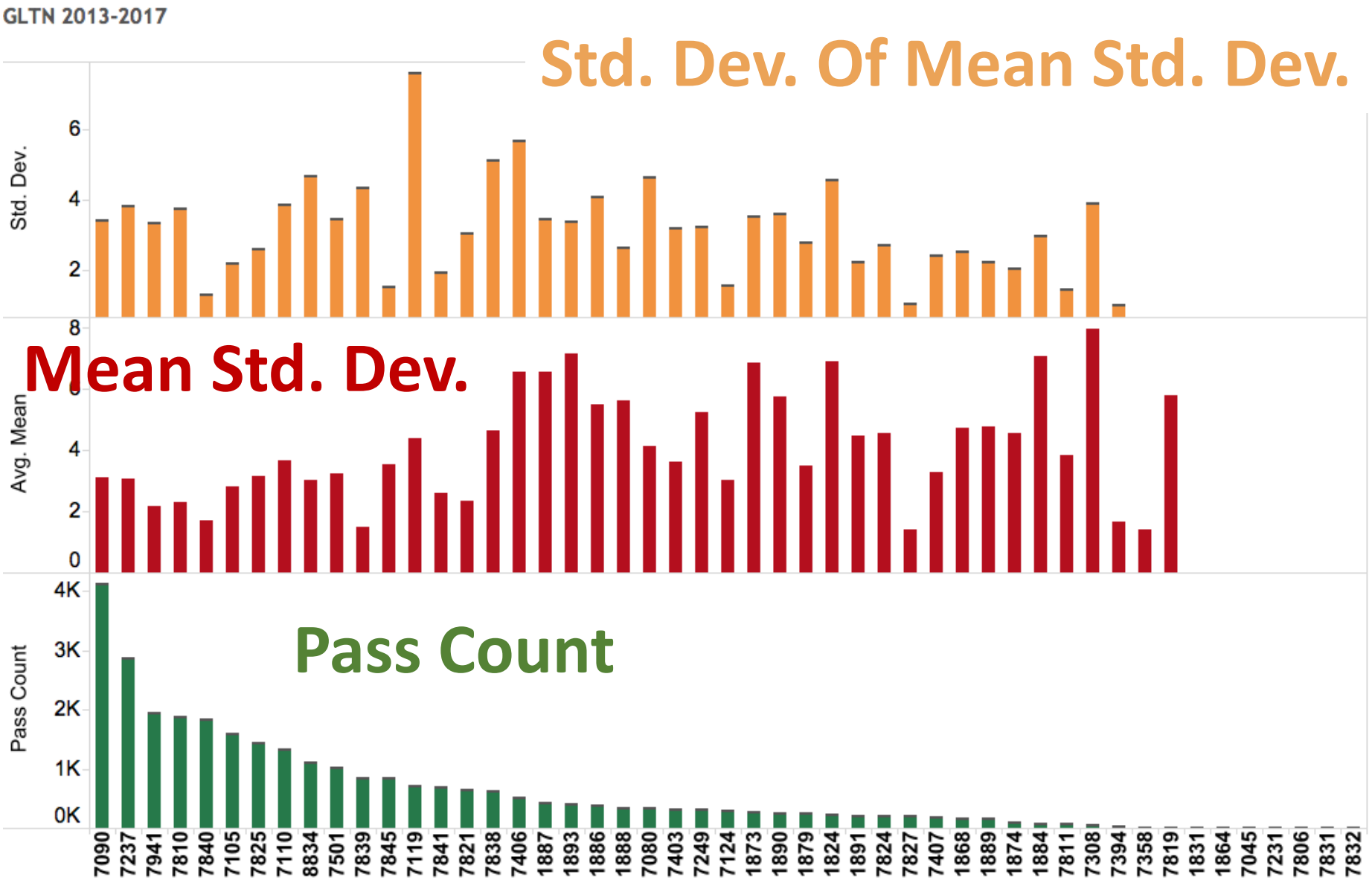
Session Chairs: Erricos C. Pavlis,
Toshimichi Otsubo,
Horst Mueller,
Cinzia Luceri

Questions raised for this session:

- What is the status of the station systematics pilot project and the other evaluation tools used by the AC's?
- What tools do we have at the stations? Are they the right ones? Can we define diagnostic procedures?
- Reporting procedures (feedback)
- How does the performance of the new technology stations compare with the legacy stations?
- What are the observed differences? What should the differences be?
- Do differences in data screening procedures have any impact on the consistency of our data products?


Matera CGS
L1 Mean 2.003
L1 Std. Dev. 1.313
L2 Mean 1.858
L2 Std. Dev. 1.913
Mean Standard Deviation of LAGEOS residuals
Std. Dev. of above Mean Std. Dev. of LAGEOS residuals
Mean Standard Deviation of LAGEOS-2 residuals
Std. Dev. of above Mean Std. Dev. of LAGEOS-2 residuals
40 ACTIVE ILRS STATIONS
QC results from 5 QC ACs: 2013 to early 2017
GLTN 40 2013-2017
Location
ALTAY L1 Mean 3.503 L1 Std. Dev. 2.767 L2 Mean 4.230 L2 Std. Dev. 3.493
Arequipa L1 Mean 3.473 L1 Std. Dev. 2.055 L2 Mean 4.086 L2 Std. Dev. 2.323
Arkhyz L1 Mean L1 Std. Dev. 3.036 L2 Mean 5.674 L2 Std. Dev. 3.091
Badary L1 Mean 5.707 L1 Std. Dev. 3.570 L2 Mean 5.877 L2 Std. Dev. 4.260
Baikonur L1 Mean 6.559 L1 Std. Dev. 3.430 L2 Mean 6.524 L2 Std. Dev. 3.247
Beijing SLR Station L1 Mean 5.097 L1 Std. Dev. 2.213 L2 Mean 6.172 L2 Std. Dev. 8.239
Borowiec L1 Mean 3.841 L1 Std. Dev. 1.426 L2 Mean 5.087 L2 Std. Dev. 3.019
Brasilia L1 Mean 3.285 L1 Std. Dev. 2.400 L2 Mean 3.683 L2 Std. Dev. 2.389
Changchun L1 Mean 2.849 L1 Std. Dev. 2.214 L2 Mean 2.962 L2 Std. Dev. 3.228
Golosiiv L1 Mean 6.905 L1 Std. Dev. 4.543 L2 Mean 7.035 L2 Std. Dev. 5.408
Grasse MeO L1 Mean 3.540 L1 Std. Dev. 1.495 L2 Mean 3.399 L2 Std. Dev. 1.531
GRAZ L1 Mean 1.280 L1 Std. Dev. 1.053 L2 Mean 1.310 L2 Std. Dev. 2.553
Haleakala, Maui L1 Mean 3.799 L1 Std. Dev. 2.014 L2 Mean 3.955 L2 Std. Dev. 2.193
Hartebeest hoek RAO L1 Mean 3.071 L1 Std. Dev. 1.831 L2 Mean 3.238 L2 Std. Dev. 2.169
Herstmon.. L1 Mean 1.683 L1 Std. Dev. 0.989 L2 Mean 1.730 L2 Std. Dev. 3.151
Irkutsk L1 Mean 4.465 L1 Std. Dev. 2.205 L2 Mean 4.421 L2 Std. Dev. 1.915
Katzively L1 Mean 7.149 L1 Std. Dev. 3.369 L2 Mean 7.124 L2 Std. Dev. 4.622
Koganei L1 Mean 7.943 L1 Std. Dev. 3.879 L2 Mean 8.211 L2 Std. Dev. 3.613
Komsomol.. L1 Mean 4.744 L1 Std. Dev. 2.511 L2 Mean 4.919 L2 Std. Dev. 2.218
Matera CGS L1 Mean 2.003 L1 Std. Dev. 1.313 L2 Mean 1.858 L2 Std. Dev. 1.913
0 1 2 3 4 5 6 7 8 9
Value
Mendeleevo L1 Mean 4.535 L1 Std. Dev. 2.029 L2 Mean 4.987 L2 Std. Dev. 2.282
MLRS L1 Mean 3.810 L1 Std. Dev. 2.300 L2 Mean 3.975 L2 Std. Dev. 2.761
MOB-5 / YARRAGADEE L1 Mean 2.925 L1 Std. Dev. 1.506 L2 Mean 3.155 L2 Std. Dev. 3.085
MOB-7 / GGAO L1 Mean 2.756 L1 Std. Dev. 1.445 L2 Mean 2.893 L2 Std. Dev. 1.647
Monument Peak L1 Mean 3.476 L1 Std. Dev. 2.075 L2 Mean 3.639 L2 Std. Dev. 3.227
Mount Stromlo L1 Mean 3.075 L1 Std. Dev. 1.947 L2 Mean 3.097 L2 Std. Dev. 1.821
Potsdam SLR 3 L1 Mean 2.539 L1 Std. Dev. 1.512 L2 Mean 2.764 L2 Std. Dev. 1.903
RIGA L1 Mean 7.069 L1 Std. Dev. 2.948 L2 Mean 5.996 L2 Std. Dev. 2.689
San Fernando .. L1 Mean 4.545 L1 Std. Dev. 2.681 L2 Mean 4.735 L2 Std. Dev. 2.862
San Juan L1 Mean 6.187 L1 Std. Dev. 2.445 L2 Mean 6.534 L2 Std. Dev. 2.977
Sejong L1 Mean 1.642 L1 Std. Dev. 0.981 L2 Mean 1.448 L2 Std. Dev. 0.892
Shanghai L1 Mean 2.101 L1 Std. Dev. 1.952 L2 Mean 2.150 L2 Std. Dev. 3.883
SIML L1 Mean 6.830 L1 Std. Dev. 3.522 L2 Mean 7.201 L2 Std. Dev. 6.243
Simosato L1 Mean 4.368 L1 Std. Dev. 1.845 L2 Mean 4.332 L2 Std. Dev. 2.785
Svetloe L1 Mean 5.614 L1 Std. Dev. 2.615 L2 Mean 5.799 L2 Std. Dev. 2.571
Tahiti L1 Mean 3.015 L1 Std. Dev. 1.554 L2 Mean 3.441 L2 Std. Dev. 1.733
Wettzell L1 Mean 4.031 L1 Std. Dev. 2.742 L2 Mean 3.979 L2 Std. Dev. 3.531
Zelenchuk.. L1 Mean 4.770 L1 Std. Dev. 2.214 L2 Mean 5.164 L2 Std. Dev. 2.059
Zimmerwald SLR L1 Mean 2.109 L1 Std. Dev. 1.165 L2 Mean 2.040 L2 Std. Dev. 1.588
0 1 2 3 4 5 6 7 8
Value

ILRS Stations' Performance 2013-2017



ILRS Stations Missing GNSS Co-location

Monume	Code	Location Name, Cour	CDDIS SOD	IERS DOMES Nos	IGS Log	IVS Log	IDS Log
1868	KOML	Komsomolsk-na-Amure, Russia	18685901	12341S001	-	-	-
1879	ALTL	Altay, Russia	18799401	12372S001	-	-	-
1886	ARKL	Arkhyz, Russia	18869601	12373S001	-	-	-
1887	BAIL	Baikonur, Kazakhstan	18879701	25603S001	-	-	-
7045	APOL	Apache Point, NM	70459501	49447S001	-	-	-
7406	SJUL	San Juan, Argentina	74068801	41508S003	-	-	-
7407	BRAL	Brasilia, Brazil	74072701	48081S001	-	-	-

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Program for Day 2 (October 3)

Session 2: How do we evaluate our current performance?

Session Chairs: Erricos C. Pavlis, Toshimichi Otsubo, Horst Mueller, Cinzia Luceri

Time	Topic	Presenter/Remarks
Session 2A	**Overview & Ongoing ASC Efforts**	***(50 minutes)***
09:00	Introduction	E. C. Pavlis
09:15	The ILRS ASC Pilot Project on systematic error estimation	Cinzia Luceri
09:35	BKG's Contribution to the ILRS Pilot Project on Systematic Errors	Daniel Koenig
09:50	**Break**	***(30 minutes)***
Session 2B	**State of the Network and Sources of Errors**	***(100 minutes)***
10:20	Evaluation of the present SLR tracking stations	Horst Mueller
10:35	SLR error sources in the kHz repetition era: How should we improve the range measurement and the products?	Toshimichi Otsubo
10:55	Variability of LAGEOS normal point sampling: causes and mitigation	José Rodríguez
11:15	Effect of pulse length, rise time, signal strength, and type of detection system on the range correction for LAGEOS-2	David Arnold
11:35	Discussion	***(25 minutes)***
12:00	**Lunch**	***(60 minutes)***

12:00	**Lunch**	***(60 minutes)***
Session 2C	**Hardware & External Tools to Improve Performance**	***(60 minutes)***
13:00	From Time Transfer by Laser Ranging to space geodetic products	Alexandre Belli
13:20	Transitioning the NASA SLR network of seven stations from the Time Interval Mode to the Event Timing Mode	Thomas Varghese
13:40	**Точка presentation**	***S. Martynov***
14:00	**Break**	***(30 minutes)***
Session 2D	**ILRS Tools for Network Support**	***(130 minutes)***
14:30	JCET Tools for the Assessment of the ILRS Stations' Performance	Erricos C. Pavlis
14:50	GOVUS – a new on-line tool for the evaluation of SLR observations to GPS, GLONASS, Galileo, BeiDou and QZSS	Radosław Zajdel
15:10	The ILRS Rapid Service Mail a tool to inform stations quickly about potential problem	T. Otsubo
15:30	Discussion/Closing Remarks	***(30 minutes)***
16:00	**Networks & Engineering Standing Committee**	***(120 minutes)***
18:00	**Missions Standing Committee**	***(120 minutes)***