Eks.__

YEAR 2014. LATPOS

SELF SERTIFICATION

Rīga 2014

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1. General overview.

Reference station system performance assessment carried out in accordance with the EUPOS specifications and standards for the application of permanent global positioning system base

Evaluation has been done in accordance:

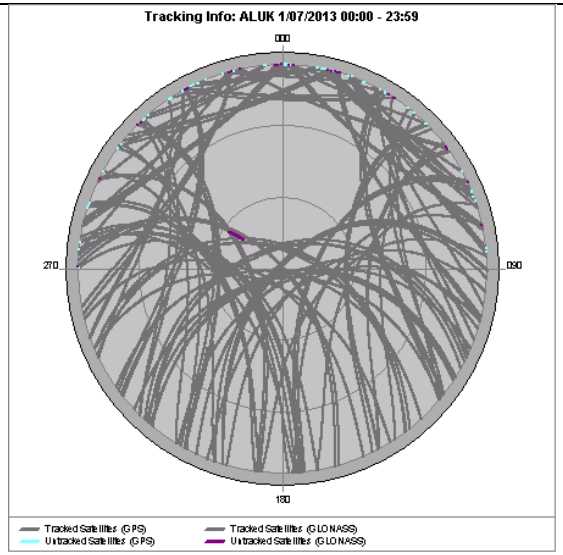
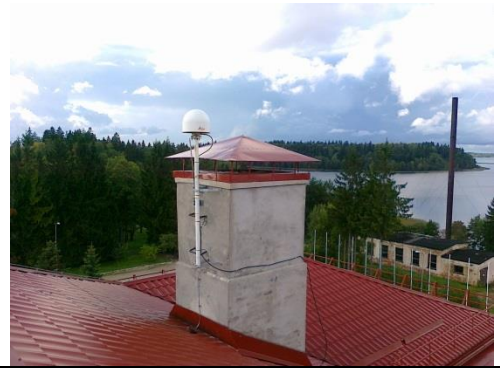
• The base station relevance to the June 4, 2008, version 2.1 . "Guidelines for base station placement ' (Guidelines for single site design) ;

• LatPos system with the 2008 to the 24th of April, version 2 . " EUPOS technical standards " (EUPOS Technical Standards) ;

• Coordinate calculations with 2007, the 21st of September, Version 1.0: "Guidelines for the determination of coordinates " (Guidelines for EUPOS reference frame fixing)

• Cross-border data exchange with 2006, the 21st of September, version 1.0, "Guidelines for trans-border data exchange " (Guidelines for cross -border exchange)

2.Site Alūksne

	Requirement		Rating	Action
2.1.	Sky visibility	 .	Measuring the number of theoretically possible. Time of the day is provided satellite reception of at least 15 satellites. The failure of more than 5 degrees is minimal.	Meets requirements
2.2.	Site installation: stability, multipath, monumentation	Top of four story brick building. Metal pipe fixed to chimney.  	Old stable building. Antenna fixed to chimney.	Meets requirements
2.3.	Antenna	Leica AR25 with dome. Not individually calibrated.		
2.3.	Communications link	Permanent cable network connection.		Meets requirements

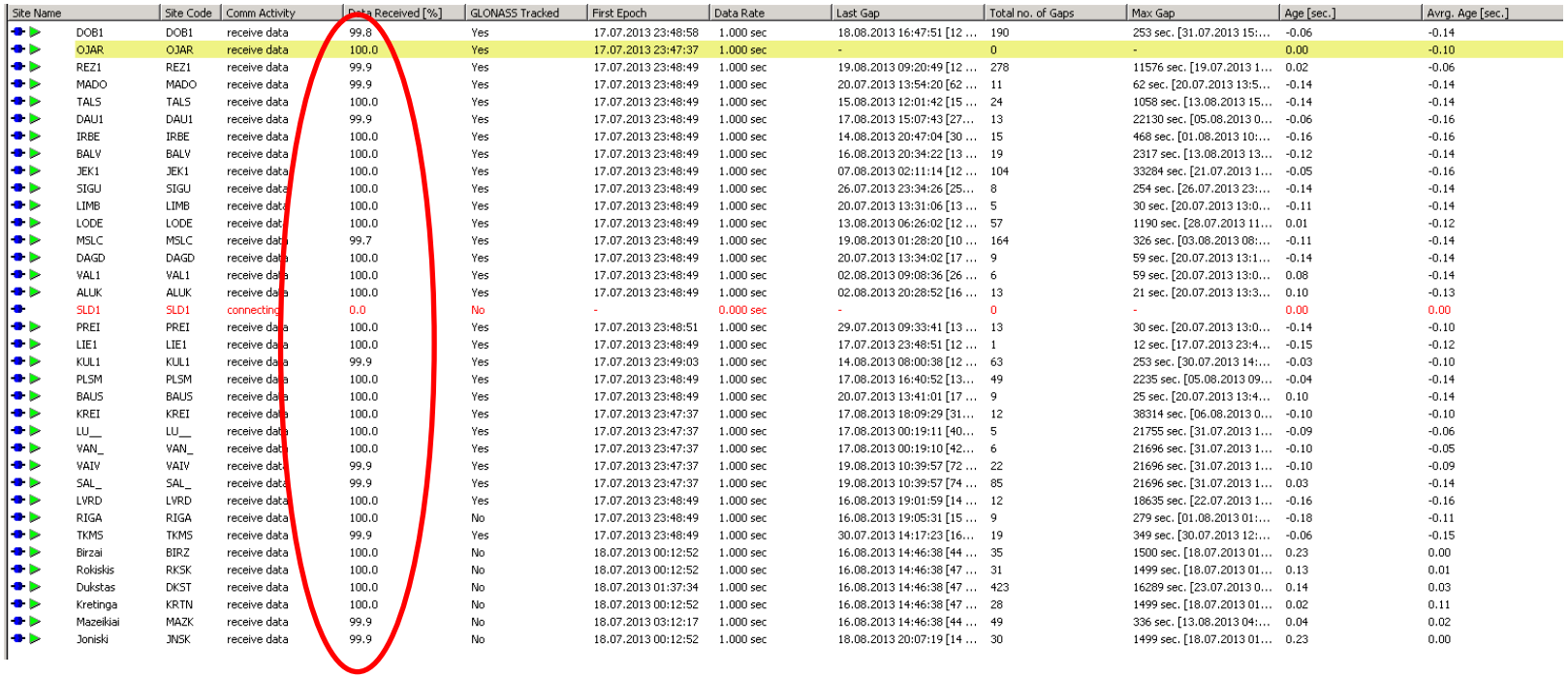
2.4. Receiver installation, access and protection

Base station equipment installed inside guarded building. All equipment placed inside secure metal box. Station equipped with UPS.		Meets requirements
Two frequency receiver Leica 1200+ GNSS Elevation angle set to 5 ° The measurement interval is 1 second.		Meets requirements

3. LatPos system

3.1. Percentage of real-time data stream availability of the entire system lifetime 99.9 % availability

Two data lines
LatPos system at address O.Vācieša 43 has two data lines connected to internet.
Each base station connected to a single data transmission line.



Site Name	Site Code	Comm Activity	Data Received [%]	GLONASS Tracked	First Epoch	Data Rate	Last Gap	Total no. of Gaps	Max Gap	Age [sec.]	Avrg. Age [sec.]
DOB1	DOB1	receive data	99.8	Yes	17.07.2013 23:48:58	1.000 sec	18.08.2013 16:47:51 [12 ...	190	253 sec. [31.07.2013 15:...	-0.06	-0.14
OJAR	OJAR	receive data	100.0	Yes	17.07.2013 23:47:37	1.000 sec	-	0	-	0.00	-0.10
REZ1	REZ1	receive data	99.9	Yes	17.07.2013 23:48:49	1.000 sec	19.08.2013 09:20:49 [12 ...	278	11576 sec. [19.07.2013 1...	0.02	-0.06
MADO	MADO	receive data	99.9	Yes	17.07.2013 23:48:49	1.000 sec	20.07.2013 13:54:20 [62 ...	11	62 sec. [20.07.2013 13:5...	-0.14	-0.14
TALS	TALS	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	15.08.2013 12:01:42 [15 ...	24	1058 sec. [13.08.2013 15...	-0.14	-0.14
DAU1	DAU1	receive data	99.9	Yes	17.07.2013 23:48:49	1.000 sec	17.08.2013 15:07:43 [27...	13	22130 sec. [05.08.2013 0...	-0.06	-0.16
IRBE	IRBE	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	14.08.2013 20:47:04 [30 ...	15	468 sec. [01.08.2013 10:...	-0.16	-0.16
BALV	BALV	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	16.08.2013 20:34:22 [13 ...	19	2317 sec. [13.08.2013 13...	-0.12	-0.14
JEK1	JEK1	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	07.08.2013 02:11:14 [12 ...	104	33284 sec. [21.07.2013 1...	-0.05	-0.16
SIGU	SIGU	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	26.07.2013 23:34:26 [25...	8	254 sec. [26.07.2013 23:...	-0.14	-0.14
LIMB	LIMB	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	20.07.2013 13:31:06 [13 ...	5	30 sec. [20.07.2013 13:0...	-0.11	-0.14
LODE	LODE	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	13.08.2013 06:26:02 [12 ...	57	1190 sec. [28.07.2013 11...	0.01	-0.12
MSLC	MSLC	receive data	99.7	Yes	17.07.2013 23:48:49	1.000 sec	19.08.2013 01:28:20 [10 ...	164	326 sec. [03.08.2013 08:...	-0.11	-0.14
DAGD	DAGD	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	20.07.2013 13:34:02 [17 ...	9	59 sec. [20.07.2013 13:1...	-0.14	-0.14
VAL1	VAL1	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	02.08.2013 09:08:36 [26 ...	6	59 sec. [20.07.2013 13:0...	0.08	-0.14
ALUK	ALUK	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	02.08.2013 20:28:52 [16 ...	13	21 sec. [20.07.2013 13:3...	0.10	-0.13
SLD1	SLD1	connecting	0.0	No	-	0.000 sec	-	0	-	0.00	0.00
PREI	PREI	receive data	100.0	Yes	17.07.2013 23:48:51	1.000 sec	29.07.2013 09:33:41 [13 ...	13	30 sec. [20.07.2013 13:0...	-0.14	-0.10
LIE1	LIE1	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	17.07.2013 23:48:51 [12 ...	1	12 sec. [17.07.2013 23:4...	-0.15	-0.12
KUL1	KUL1	receive data	99.9	Yes	17.07.2013 23:49:03	1.000 sec	14.08.2013 08:00:38 [12 ...	63	253 sec. [30.07.2013 14:...	-0.03	-0.10
PLSM	PLSM	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	17.08.2013 16:40:52 [13...	49	2235 sec. [05.08.2013 09...	-0.04	-0.14
BAUS	BAUS	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	20.07.2013 13:41:01 [17 ...	9	25 sec. [20.07.2013 13:4...	0.10	-0.14
KREI	KREI	receive data	100.0	Yes	17.07.2013 23:47:37	1.000 sec	17.08.2013 18:09:29 [31...	12	38314 sec. [06.08.2013 0...	-0.10	-0.10
LU__	LU__	receive data	100.0	Yes	17.07.2013 23:47:37	1.000 sec	17.08.2013 00:19:11 [40...	5	21755 sec. [31.07.2013 1...	-0.09	-0.06
VAN_	VAN_	receive data	100.0	Yes	17.07.2013 23:47:37	1.000 sec	17.08.2013 00:19:10 [42...	6	21696 sec. [31.07.2013 1...	-0.10	-0.05
VAIV	VAIV	receive data	99.9	Yes	17.07.2013 23:47:37	1.000 sec	19.08.2013 10:39:57 [72 ...	22	21696 sec. [31.07.2013 1...	-0.10	-0.09
SAL_	SAL_	receive data	99.9	Yes	17.07.2013 23:47:37	1.000 sec	19.08.2013 10:39:57 [74 ...	85	21696 sec. [31.07.2013 1...	0.03	-0.14
LVRD	LVRD	receive data	100.0	Yes	17.07.2013 23:48:49	1.000 sec	16.08.2013 19:01:59 [14 ...	12	18635 sec. [22.07.2013 1...	-0.16	-0.16
RIGA	RIGA	receive data	100.0	No	17.07.2013 23:48:49	1.000 sec	16.08.2013 19:05:31 [15 ...	9	279 sec. [01.08.2013 01:...	-0.18	-0.11
TKMS	TKMS	receive data	99.9	Yes	17.07.2013 23:48:49	1.000 sec	30.07.2013 14:17:23 [16...	19	349 sec. [30.07.2013 12:...	-0.06	-0.15
Birzai	BIRZ	receive data	100.0	No	18.07.2013 00:12:52	1.000 sec	16.08.2013 14:46:38 [44 ...	35	1500 sec. [18.07.2013 01...	0.23	0.00
Rokiskis	RKSK	receive data	100.0	No	18.07.2013 00:12:52	1.000 sec	16.08.2013 14:46:38 [47 ...	31	1499 sec. [18.07.2013 01...	0.13	0.01
Dukstas	DKST	receive data	100.0	No	18.07.2013 01:37:34	1.000 sec	16.08.2013 14:46:38 [47 ...	423	16289 sec. [23.07.2013 0...	0.14	0.03
Kretinga	KRTN	receive data	100.0	No	18.07.2013 00:12:52	1.000 sec	16.08.2013 14:46:38 [47 ...	28	1499 sec. [18.07.2013 01...	0.02	0.11
Mazeikiai	MAZK	receive data	99.9	No	18.07.2013 03:12:17	1.000 sec	16.08.2013 14:46:38 [44 ...	49	336 sec. [13.08.2013 04:...	0.04	0.02
Joniski	JNSK	receive data	99.9	No	18.07.2013 00:12:52	1.000 sec	18.08.2013 20:07:19 [14 ...	30	1499 sec. [18.07.2013 01...	0.23	0.00

Figure: Data transmission rating fixed in Leica Spider Software.
System meets EUPOS standards requirements on data transmission.

3.2. Correction types;

		Rating	Action
1	Data flow format RTCM 3.1	Latest format	Meets requirements
2	Correction type – SITE	Nearest station solution	Meets requirements
3	Correction type – MAC – NETW_MAX	Network solution	Meets requirements
4	Correction type – iMAC – NETW-iMAX	Network solution	Meets requirements
5.	Correction type for agriculture CMR+	For Trimble agriculture GNSS receivers.	Meets requirements

Reference station system:

Requirement.	Rating	Action
3.3. Distribution data security technological solution	Data distribution using NTRIP, WEB and FTP	Meets requirements
3.4. Real-time monitoring base station	Not installed	2 monitoring stations required
3.5. Data quality monitoring using post-processing	Leica Spider software data completeness checking	Meets requirements
3.6. Post-processing data format	RINEX 2.11	Meets requirements