EGSIEM General Meeting

Date(s) of Meeting:	19. & 20. Jan 2017	Location:	Hauptgebäude, Universität Bern
Minutes Taken by:	K. Cann-Guthauser	Doc ID:	General_Assembly_Minutes_Jan2017

Participants		
EGSIEM Management	**EGSIEM Consortium Members**	**Advisory Board, Associated Members, and Guests**
A. Jäggi / UBERN (AJ)	U. Meyer / UBERN (UM)	H. Steffen / Lantmäteriet (HS)
F. Flechtner / GFZ (FF)	Y. Jean / UBERN (YJ)	T. Gruber / TU München (TG)
A. Güntner / GFZ (AG)	~~S. Bruinsma / CNES (SBr)~~	U. Marti / swisstopo (UMa)
T. Mayer-Gürr / TUG (TMG)	J.M. Lemoine / CNES (JML)	R. Gross / JPL (RG)
J. Flury / LUH (JF)	R. Biancale / CNES (RB)	D. Koenig / BKG (DK)
~~M. Weigelt / LUH (MW)~~	H. Zwenzner / DLR (HZ)	P. Ditmar / TU Delft (PD)
~~T. van Dam / UL (TvD)~~	S. Bourgogne / G&C (SB)	K. Sośnica / Wrocław (KS)
	C. Gruber / GFZ (CG)	J. Skøien / JRC (JS)
K. Cann-Guthauser / UBERN (KCG)	B. Gouweleeuw / GFZ (BG)	M. Blossfeld / TU München (MB)
	Z. Li / UL (ZL)	A. Eicker / HCU Hamburg (AE)
	Q. Chen / UL (QC)	
	B. Klinger / TUG (BK)	F. Beroud / EU (FB)
	A. Kvas / TUG (AK)	R. Forsberg / EU (RF)
	A. Shabanloui / LUH (AS)	
	H. Dobslaw / GFZ (HD)	
	L. Poropat / GFZ (LP)	

Agenda Item Nr.	EGSIEM General Assembly, Jan 2017	Action Item
1	**Welcome and purpose of Meeting [Jäggi]**	
	Annex01_Welcome (Jäggi) AJ welcomed all to the General Meeting and gave logistical information to those present, he talked about the upcoming deliverables and highlighted Milestone 4, operational service readiness (M27).	

	AJ also addressed the Action Items and explained how EGSIEM has tried to incorporate SLR data from specialists around Europe and beyond, see the later section and presentation on the EGSIEM SLR Splinter Group	
	AI021 KCG to chase TvD regarding Conference Submission Plan	
	AI022 DOI Numbers – AJ presented the BORIS system at UBERN which assigns a DOI number to publications (and Time series). FF reported that GFZ also offers a system which assigns a DOI number (such as ICGEM). JML asked what would happen if an institute could not generate a DOI, FF answered that it might be possible for GFZ to assign one on their behalf. AK said that their latest series was assigned a DOI by GFZ.	
2	**WP2 Gravity Field Analysis (TMG)**	

Annex02_WP2_Introduction (Mayer-Gürr)

TMG reported that all 'official' work on WP2 had now ceased (WP ended in M18).

Normal equations for all of 2006/7 are now available upon request. TUG are still exploring this data via an Austrian Research Council Grant.

Annex03_WP2_Solution_Artifacts (Meyer)

AK advised that there were artefacts in the screened Nov. 2006 UBERN series, linked to day 333, spectral screening did not seem to locate this anomaly. They can also be found in July 2007. FF asked what happened with the data from day 333 – UM responded that he had removed it and will investigate further.

JML did not present anything but there are 2 points causing problems: The determination of sectorial coefficients are worse than other groups – which needs investigating but does not impair the combined solution. The slope of formal errors is also different from other groups. AJ asked if CNES had tested with AIUB kinematic orbits, JML responded that they had and it did not make a difference.

TG asked if the anomaly identified by UM was indicative of a signal rather than be treated as an outlier?

JF reported that LUH were looking into specific frequency bands.

Annex04_WP2_GFZ_Solutions (Flechtner)

GFZ where able to process monthly RL05 solutions until August 2016, however battery problems continue (2 x emergency situations recently). The Accelerometer on GRACE 2 is now permanently switched off. The hope is that GRACE will continue, but with much reduced K-Band data (up until mid-2017), GRACE-FO is now expected to launch in 2018, however funding TBD. GRACE 1 should be able to continue until Feb 2018. Representatives from DLR would like to decommission the project whilst control is still present.

AJ asked if EGSIEM could lobby on behalf of continuation, but FF thought that this would not make a difference.

FF advised the consortium on updated L2 products at GFZ and work being undertaken (including GPS data from UBERN), GFZ were reporting improved Accelerometer results, in line with other ACs. A paper on the new AOD1B RL06 is currently in preparation including variance reduction of K-Band range-acceleration residuals. Statistical investigations show that RL06 A0D1B data is steadily improving.

	Annex05_WP2_Acceleration_Approach (Li)		
	ZL described the main differences between the various acceleration approaches available. The code for the Rigorous Acc. App. is now ready, the test stage has now begun – following celestial mechanics approach (UBERN). ZL would like to record her thanks to AJ, UM and CG for their assistance. Work outstanding for UL: Solve for orbit and the gravity field parameters using our rigorous acceleration approach(no iteration), only ll-SST considered so far, position and range-rate also needed to form normal equations. GOCO05S is used by UL as their test model. AJ asked how UL had solved the orbit parameters, ZL responded that UL uses an additional observation to UBERN		
3	**WP1 Management (KCG)**		
	Annex06_WP1_Management (Cann-Guthauser)	**AI021**	
	KCG gave an update on reporting & finances and outstanding deliverables for the remainder of the project. He also described the concept of the Data Management Plan. A discussion ensued over what this meant for the Geodetic community in terms of releasing data and specifically for EGSIEM ACs. KCG to liaise with ACs over the questions which will need answering over their data storage and the need to harmonise metadata (perhaps via DOIs). KCG also to circulate some ideas for licensing the data being released within the framework of EGSIEM.		
4	**WP3 Integration of complementary data (TvD)**		
	Annex0_WP3_GNSS_Validation (Chen)		
	QC introduced work being undertaken on WP3 at UL on the reprocessing campaign under Repro3, results are so far consistently good across 7 GRACE products. AJ asked why nearly 100 ground stations were discarded, QC responded that these ground stations had either very short time-spans (less than 2 years) or they provided data gaps or very noisy data. JF asked if the reprocessing campaign reflected an improvement of the EGSIEM combined solution, QC responded by saying that for specific areas the EGSIEM combined solutions did perform better than the other 6 GRACE solutions. AJ asked if comparison had been made against other datasets (eg EUREF), QC replied that as the raw data took up to one month to make useable this was not currently possible. **Annex08_WP3_OBP_Validation (Poropat)** LP described the processes she uses when validating using in situ OBP time series, she reported that only two years of data was not enough to provide meaningful feedback. RF asked for a clarification over the presentation, negative reading meant that correlation failed, in which case OBP was not providing significant correlation. Most OBP sensors are near the coast which causes continental leakage. CG asked whether the seasonal trend was removed, following a conversation between LP, HD, PD and UM it was reported that gridded gravity data products (L3) are not sufficient to compare to OBP.		

	Annex09_WP3_GIA_Status (Steffen) The GIA model appears to fit GRACE well, the combined solutions should be sent to HS. HS asked when do we need the updated GIA model correction for EGSIEM? ASAP HS has selected Tarasovian ice models and also combined a series of small regional ice models. HS has been delayed slightly due to the late arrival of a Patagonian ice sheet model. TMG queried availability of rotational axis information used, which HS has said he would include.	
5	**WP4: Scientific Service (UM)**	
	Annex10_WP4_Combination_NEQ (Meyer) UM discussed the iterative determination of weights procedure he followed to combine the different solutions, whilst also weighting based on the most accurate noise levels. Combined solution on NEQ level is more robust than solution level. The screening must be consistent, the more inaccurate the solutions from each AC the worse the combined solution. **Annex11_WP4_Preliminary_Level3 (Jean)** YJ updated the group on her work in studying the combined solution at AIUB. For validation purposes Jürgen Kusche at the last meeting in Potsdam advised using reservoir areas, this has been combined using altimetry data from Hydroweb. **Annex12_WP4_EGSIEM_Validation (Chen)** Two years of GRACE data vs GNSS Loading: with regards to WRMS reduction against Repro3 QC experienced good perfomances for ITSG and the combined EGSIEM solution whilst larger differences for GFZ and CNES. Two year GRACE vs ITRF2014 shows similar results, but higher (better) statistics. AJ asked for clarification over where the difference in GFZ solutions lay, FF had reported reasonable results earlier in terms of GFZ5 RL05a but in WRMS reduction using GFZ-EGSIEM QC showed a degradation and FF asked for further validation. **Annex13_WP4_Preliminary_Level3 (Kvas)** AK described the different approaches to producing gridded L3 products for Hydrology, Cryosphere and Ocean and presented some preliminary results using various DDK filters. Background model comparison showed significant variances in the monthly mean when taking different measurements of what is a GRACE month into account. UM highlighted the problem of relative weighting when comparing/combining SLR and GRACE C20 *Monthly Mean* Feedback was sought from all present GRACE users over what they count as a 'GRACE month'. Following some debate UM decided that the start and end dates will now be used to form a GRACE month, and that AK will add back the monthly mean. UM asked all ACs for monthly means of their dealiasing products.	

6	**WP5: NRT and Regional Service (FF)**	
	Annex14_WP5_Introduction (Flechtner) FF introduced work undertaken so far on WP5 **Annex15_WP5_TUG_Status (Kvas)** AK: Quick look data has been compared to ITSG2016 which is broadly similar in terms of noise levels. When looking at the Danube basin it is similar. Thanks to a new A0D1B release it should now be available after only 10 hours (currently 104 hours). Key point is that the interfaces for hydrologists still need to be defined, and the lack of accelerometer data from GRACE-2 needs to be investigated – FF reported that CSR are currently looking into an accelerometer 'patch' (based on GRACE-1's functional acc.) **Annex16_WP5_NRT_Solutions (Gruber)** CG explained how the revised A0D1B product (RL06) should allow the production flow to be shortened (which may help with Step 8: plausibility test/evaluation. NRT EOP Orbits currently showing real discrepancies (measured in cms). GRACE RBF data is available for download from the EGSIEM ftp server **Annex17_WP5_OBP_Validation (Dobslaw)** HD Described development of the new AOD1B6 product. For ocean applications the updated RBF release is not an improvement on release 100 (when used in conjunction with OBP). CG stated that his NRT data was not designed to look at oceans, HD suggested using a Gaussian 500 filter which might improve performance over the ocean **Annex18_WP5_NRT_Preparation (Chen)** QC described work undertaken on ITRF2014, his findings were that the WRMS reduction was slightly worse in GFZ v200 (as opposed to v100), however, they are better than other hydrological models. JPL and SOPAC GNSS time series have a minimum latency of 12 days (not quick enough for NRT validation). QC highlighted the GNSS offset issue in relation to the GNSS NRT validation, which is that there is no current possibility to automate the offset detection process (at least as far as he was aware).	
7	**WP6: Hydrological Service – (AG)**	
	Annex19_WP6_Introduction (Güntner) AG gave a brief introduction into the aims of the WP and reviewed the upcoming deliverables. **Annex20_WP6_GFZ_Status (Gouweleeuw)** BG explained how their upcoming paper on evaluation of GRACE daily gravity solutions for hydrological extremes in selected river basins was originally intended as a research letter but has been revised into a journal entry, currently under review. Ganges results from last meeting showed significant divergence from TWS, individual solutions (river runoff, groundwater and snow) are now much improved. WRT Brahmaputra the snow simulation signal is off, which may also affect the river runoff. The flood & drought indicator (normalised TWSA) was showing wetter than normal conditions in the Sahara area (2007) due to GRACE noise, which led to a revision of the treatment of noise when deriving the indicator.	

	GRACE data was compared to Dartmouth Flood Observatory database, preliminary findings indicate good results in southern hemisphere & lower northern hemisphere, but worse correspondence for floods in artic river basins.	
	JRC has also been involved to define the integration of the GRACE-based flood indicator as an information layer into GloFAS	
	YJ queried the noise reduction process used at GFZ for calculating the flood indicator. BG initially estimated noise from ocean signal, then AK subtracted the formal error from the signal, then they increased the thresholds above which a storage anomaly was considered as having a high flood potential.	
	FF queried other areas on the Normalised TWSA slide, generally the heightened wetness areas were correct, in the lower latitudes.	
	JF queried the absence of a negative TWS trend in the GRACE signal for the Ganges river basin while other studies show the declining groundwater storage for parts of the basin.	
	Annex21_WP6_Flood_Volume (Zwenzner)	
	DLR have requested access to Tandem-X DEM and local Bangladeshi data. HZ then walked through the workflow, he also highlighted the problem of handling different cellsizes (Raster approach) and which thresholds were investigated and finally used in the workflow.	
	HZ also highlighted another study entitled Mask used for volume estimations with GRACE, EGSIEM is within their accuracy, but this is still not enough for the objectives of the project. HD asked where the total water storage volume estimation quoted from the paper was derived – HZ responded that it was probably from a model.	
	HD asked if it was possible to use SAR on a global scale, yes, but currently waiting on TanDEM-X access (Sentinel 1 Data is already present). This encouraged a debate on the suitability of different areas to provide validation.	
8	**WP7: Dissemination and Exploitation (AJ)**	
	Annex22_WP7_EGSIEM_Challenge (Shabanloui)	
	AS gave an overview of the EGSIEM Challenge	
	AS to write a blog entry about the process and the overall candidates, a discussion took place over where would be best to host the students and it was agreed to contact the winners and ask them where they would like to spend their time.	
	EGSIEM Plotter Demonstration **Live demonstration** by SB who introduced one of the new feature on the plotter which is a 'Share' button that allows users to generate a unique link to whichever time series they were looking at.	
	There are a couple of snags which need to be solved before the link sharing option can be released.	**AI022**
	SB asked for those people who will want to put more data into the plotter (NRT…) to contact him ASAP.	
	Formulating terms of reference for long-term usage of EGSIEM Plotter for GRACE FO and beyond?	
	Combination should be published ASAP, currently waiting on GIA model, but following discussions it was agreed to work towards providing a Full Series (rather than limiting to 2006/7) by the end of 2017.	

	Annex 23_WP7_Summer_School (Jäggi) AJ reported that the Summer School will now take place in Potsdam on 11 – 15 September 2017, he recorded his thanks to FF and all at GFZ for their assistance in finding additional funding for the school. **Annex24_WP7_Copernicus (Jäggi)** AJ gave feedback on lobbying efforts being led by prominent EGSIEM members on behalf of the Earth Observation community. FB gave some input on attendees from DG GRO and the flyer topics as presented.	
8	**EGSIEM SLR Splinter Group Presentation**	
	Annex25_SLR_Gravity_Fields (Bloßfeld) MB presented work performed on SLR de-correlation at DGFI TUM. On Thursday the splinter group prepared a table of all SLR processing standards across 6 international SLR experts, UM was present to provide input on the EGSIEM processing standards. An initial plan to combine key areas has been agreed and initial solutions (2006/7) should be sent to UM for combination (with some weighting planned) by the end of February. Subsequent iterations of the individual solutions will also be combined later in 2017. AJ (on behalf of EGSIEM) acknowledged the efforts of the SLR community in working on EGSIEM at such short notice, and in particular to MB for his work in coordinating everything.	
9	**Other presentations**	
	Annex26_White_Noise (Ditmar) Pavel Ditmar from Delft gave a presentation on "Estimation of white noise in a mass anomaly time-series and modelling the geocenter motion"	
10	**Close (AJ)**	
	AJ invited the EU Project Officer and EGSIEM Scientific Reviewer to say a few words about the progress of the project: broadly they said that the project was in good shape ("running like a swiss clock"), but there was still a significant amount of work to go. AJ thanked all for attending and their input. He advised that the next project meeting would take place most likely on the **8th and 9th June**. Many suggestions were made as to where to hold the meeting (thank you to TUG, CNES & LUH), we await confirmation of availability from DLR.	

Action Item Status List (open and new AI's)				
A.I.	Originator	Actionee	Action Description	Due Date
006	EGSIEM	WP Managers	Collect ideas for paper topics to set up a publication plan	<mark>Continuous</mark>
020	EGSIEM	UL	Submission plan to be created for dedicated sessions at conferences (see Task 7.5)	<mark>31.3.2016</mark>
021	EGSIEM	UBERN	KCG to liaise with ACs to provide them with EU document which discusses outline to DMP.	08.06.2017
022	EGSIEM	EB	To announce the summer school ASAP	28.02.2017