

	EUROPEAN COMMISSION RESEARCH AND INNOVATION DG	Periodic Report
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Project No: 263506

Project Acronym: AFFECTS

Project Full Name: Advanced Forecast For Ensuring
Communications Through Space

Periodic Report

Period covered: from 01/03/2011 to 29/02/2012

Period number: 1st

Start date of project: 01/03/2011

Project coordinator name:
Dr. Volker Bothmer

Version: 3

Date of preparation: 23/08/2012

Date of submission (SESAM): 23/08/2012

Date of submission (SESAM): 23/08/2012

Project coordinator organisation name:
GEORG-AUGUST-UNIVERSITAET GOETTINGEN
STIFTUNG OEFFENTLICHEN RECHTS

Periodic Report

PROJECT PERIODIC REPORT

Grant Agreement number:	263506
Project acronym:	AFFECTS
Project title:	Advanced Forecast For Ensuring Communications Through Space
Funding Scheme:	CP
Date of latest version of Annex I against which the assessment will be made:	09/02/2011
Period number:	1st
Period covered - start date:	01/03/2011
Period covered - end date:	29/02/2012
Name of the scientific representative of the project's coordinator and organisation:	Dr. Volker Bothmer GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS
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Project website address:	www.affects-fp7.eu

Declaration by the scientific representative of the project coordinator (1)

I, Dr. Volker Bothmer GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS , as scientific representative of the coordinator of the project AFFECTS and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

The project has fully achieved its objectives and technical goals for the period.

The attached periodic report represents an accurate description of the work carried out in this project for this reporting period.

The public website is up to date.

To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 6) and if applicable with the certificate on financial statement.

All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name	Dr. Volker Bothmer GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS
Date	23/08/2012

This declaration was visaed electronically by Volker BOTHMER (ECAS user name nbothmvo) on 23/08/2012

1. Publishable summary

Summary description of project context and objectives

AFFECTS is a space weather research project under the 7th Framework Programme of the European Union. The natural hazards of space weather have the potential to catastrophically disrupt the operations of technological systems. In the AFFECTS project European and US scientists are developing an advanced prototype space weather warning system to safeguard the operation of telecommunication and navigation systems on Earth to the threat of solar storms in the timeline of March 2011 until February 2014. The project website is hosted at www.affects-fp7.eu.

Solar storms are a consequence of sudden eruptions of magnetised gas in the Sun's outer atmosphere. Often such storms start with a sudden release of electromagnetic energy lasting for some minutes, accompanied by an eruption of a giant cloud of magnetised plasma – a coronal mass ejection (CME). The fastest of these “space hurricanes” are accelerated to speeds of ten million kilometres per hour and, if heading in the direction of Earth, reach our home planet at a distance of 150 million km in less than a day. Figure 2 of the attachment provides a generic sketch of the phenomenon.

The impact of the coronal mass ejection on the Earth's magnetosphere causes a geomagnetic storm if the magnetic field of the coronal mass ejection or of the effected ambient solar wind is oriented antiparallel to the direction of the Earth magnetic field. Through the reconnection of the magnetic fields large-scale current systems are driven in the Earth magnetosphere that can cause severe space weather effects: Polar lights become visible even at equatorial latitudes, astronauts and airline crews and passengers become exposed to enhanced radiation doses in form of energetic particles up to GeV energies, satellites in low Earth orbit experience enhanced orbital drag and can loose hundred of meters in height, navigation and telecommunication systems are affected or may be even become completely disrupted locally, power grid transformers can be severely damaged causing power outages, such as in Quebec 1989 or in Malmö 2003.

The key objectives of the AFFECTS project are to provide state-of-the-art analysis and modeling of the Sun-Earth Chain of Effects on the Earth's ionosphere and their subsequent impacts on communication systems based on multipoint space observations and complementary ground-based data; to develop a prototype space weather early warning system and reliable space weather reports and forecasts, with specific emphasis on ionospheric applications through TEC variation mapping (see Figure 3 of the attached pdf-document); to disseminate the alerts, reports, forecasts and modelling results through dedicated web interfaces and services to specific end user groups, the scientific community and general public.

Description of work performed and main results

The AFFECTS project is comprised of six dedicated WPs with specific tasks allocated to each of them as specified in the DoW. According to the DoW specifications for year 1, the following work has been performed in the individual WPs, with the key results listed:

- WP1 has its objective in ensuring the administrative, financial and legal management of the project. The arrangement and preparation of meetings of the management bodies (KO, SC, GM) have been successfully managed (D1.2). No potential conflicts had to be solved. All required reports/deliverables have been collected and submitted and communication with the responsible PO at REA was very productive. As outcome of the WP a set of document templates was established with a corporate design (D1.1), the Wiki-Interface is available at www.affects-fp7.eu (D1.3) and the SC, AB and URIT have been established (D1.4).

- WP2 has the overall function to establish and maintain the pipeline of state-of-the-art data from instrumentation in the field, including both, satellite and ground-based data to WP3 (early warning) and WP4 (Forecasting Tools and Modeling). The Web-Interface for EUV data (D2.1), the L1 solar wind and geomagnetic indices data base (D2.4), the Web-interface for AE activity monitor and local indices data base (D2.5) and GNSS based ionospheric data base (D2.6), including vertical sounding data from auroral zone and polar cap ionosondes, have been established. The stream of data from instruments on board STEREO, SOHO, SDO, Proba2, ACE, GOES and ISS is flawlessly maintained by the AFFECTS partners. Full magnetometer records are since February 2012 accessible to the project members to help study auroral space weather effects.

- WP3 has as its main objective to help establish and maintain an early space weather warning system, with specific emphasis on ionospheric applications. The layout for the Early Warning System for GNSS Users (D3.2) has been established. NOAA SWPC provides 24/7 flare warnings,

but it was found that during certain time intervals, the GOES instrument suffers from data gaps. Through a specific analysis of data from the Proba2 instrument, LYRA data can now be used to bridge these gaps with a measurement accuracy of about 10%. Coronal mass ejection characteristics have been derived from stereoscopic modeling and tracking of CMEs detected with STEREO/SECCHI. The results serve as input for the ENLIL CME simulation code and to derive arrival times for solar storms at Earth. It is found that most CMEs are considerably decelerated en route to Earth, with the fastest ones having speeds above 2.000 km/s. The alert time in extreme events can decrease to less than half a day. It appears that multiple events from individual active regions play a major role for extreme space weather as exemplified through solar activity on August 01, 2010. During the October 2003 storm the dTEC variation exceeded 30 TECU within several minutes, corresponding to range errors of several tens of m. Convection of enhanced TEC fronts from the polar zones over Europe took place in less than an hour. Further quantitative event studies are under way.

- WP4 role is to develop the core components of forecasting modules for integration in the Forecast System Ionosphere developed in WP5. Though no deliverables were planned for year 1, the prototype software tools for forecasting geomagnetic indices Dst and Kp with 3 hours lead time have been developed. It is found that the maximum lead time which can be achieved by an operational system, is 4 hours in advance of solar storms. Alerts from L1 ACE solar wind data allow 15-30 min. warnings.

- WP5 has its objectives in reducing the impact of space weather phenomena on telecommunication and navigation systems through quantitative forecasts of ionospheric perturbations based on solar, geomagnetic and ionospheric data up to 24 hours in advance (Forecast System Ionosphere (FSI)). For this system, the architecture has been designed and processor modules are implemented and tested (D5.1). Online dissemination of TEC maps is under implementation at the SWACI AFFECTS website at swaciweb.dlr.de/affects/. Comparisons with the NOAA SWPC CTIPe (Coupled Thermosphere Ionosphere Plasmasphere Electrodynamics model) are in progress.

- WP6 objectives are to disseminate overall space weather data and generated products, including early warnings, reports and forecasts to end users, the scientific community, and general public and the organisation of a user workshop. A dedicated website for data dissemination has been established in the environment of the DLR SWACI web service (see link provided under WP5). The website incorporates a solar, geomagnetic and ionospheric database. Additionally, it provides equivalent slab thickness products retrieved from vertical sounding data (UoT) and TEC data (DLR). The AFFECTS project is featured through "The Sun in 3D" DVD/blu-ray booklet and red and blue stereoglasses. The AFFECTS logo and trailer have been established and are available through the AFFECTS website (www.affects-fp7.eu). AFFECTS analyses of several major space weather events have received overwhelming media coverage (newspapers, radio, journals, TV). The AFFECTS forecasts have helped avoiding deleterious warnings in these cases. The SWACI TEC maps can be consulted in the NASA Space Weather App for mobile phones.

Expected final results and potential impacts

Solar activity affects the entire Earth environment from the magnetosphere down to the ionosphere, and even to the lower atmosphere climate system. The natural hazards of space weather do not only modify the atmosphere. They also have the potential to catastrophically disrupt the operations of many technological systems, such as communication systems and power grids on Earth. Figure 1 in the attached pdf-document summarises the different effects of space weather on modern technology systems. In the AFFECTS project, European and US scientists are developing an advanced prototype space weather warning system to help mitigate space weather effects on the operation of telecommunication and navigation systems in a timely manner with regard to the approaching maximum of solar activity expected to occur after 2012. Key project elements are the development of reliable alerts, forecasts and reports of major space storms and their expected quantitative impacts on the Earth's ionosphere based on state-of-the art satellite and ground-based data sets and simulations and models. The space weather alerts, reports and forecasts and modelling results will be disseminated to specific user groups, the scientific community and general public through dedicated web interfaces and Media cooperation. The project aims at achieving synergies to the building blocks of ESA's space weather segment of the Space Situational Awareness Program currently under development, international space weather activities and cooperation with the WMO. The institutions and enterprises involved in the AFFECTS project are listed in the attached pdf-document.

Project public website address:

www.affects-fp7.eu

2. Core of the report

Project objectives, Work progress and achievements, and project management during the period

The Project Summary Pdf document contains the core of the report.

3. Deliverables and milestones tables

Deliverables (excluding the periodic and final reports)										
Del. no.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I (proj month)	Actual / Forecast delivery date	Status	Comments
1	Definition of internal document templates	1.0	GEORG-AUGUST-UNIVERSITAET	GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Report	CO	3	31/05/2011	Submitted	
2	Kick-Off Meeting document ation	2.0	GEORG-AUGUST-UNIVERSITAET	GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Report	PU	6	31/08/2011	Submitted	
3	Provision of online Wiki-Interface	1.0	GEORG-AUGUST-UNIVERSITAET	GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Report	PU	6	31/08/2011	Submitted	
4	Report on formation of Steering Committee, Advisory Board and UIRT	2.0	GEORG-AUGUST-UNIVERSITAET	GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Report	PU	10	31/12/2011	Submitted	
1	Provision of a dedicated Web-Interface for EUV data	2.0	2	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	10	31/12/2011	Not submitted	
2	Online provision of solar activity proxies and solar activity data base	0.0	2	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	24	28/02/2013	Not submitted	
3	Online provision of SEPS EUV and plasma data	0.0	FRAUNHOFER-GESELLSCHAFT	ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	Report	PU	36	28/02/2014	Not submitted	
4	Online provision of L1 so	2.0	2	DEUTSCHES	Report	PU	3	31/05/2011	Submitted	

	lar wind, geomagnetic indices data base			ZENTRUM FUER LUFT - UND RAUMFAHRT EV					
5	Provision of a Web-interface for AE activity monitor and local indices data base	2.0	2	UNIVERSITETET I TROMSOE	Report	PU	6	31/08/2011	Submitted
6	Online provision of GNSS based ionospheric data base	1.0	2	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	PU	10	31/12/2011	Not submitted
7	SPIS model	0.0	2	ASTRIUM GMBH	Report	PU	24	28/02/2013	Not submitted
1	Provision of online operational integration of software packages in full operational chain	0.0	3	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	CO	33	30/11/2013	Not submitted
2	Provision of layout for a n early warning system for GNSS users	1.0	3	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	PU	10	31/12/2011	Not submitted
3	Provision of final version of Early Warning System	0.0	3	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	CO	18	31/08/2012	Not submitted
4	Report on Quality Control and User Feedback	0.0	3	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	24	28/02/2013	Not submitted
1	Provision of software tool for forecasting indices	0.0	4	##### ##### ##### ##### ##### ##### ##### ##### ##### #####	Report	PU	18	31/08/2012	Not submitted

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2	Report on solar EUV characteristics	0.0		FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	Report	CO	18	31/08/2012	Not submitted
3	Online provision of auroral alert and tracking system	0.0	4	UNIVERSITETET I TROMSOE	Demonstrator	PU	18	31/08/2012	Not submitted
4	Provision of software tool for forecasting perturbed TEC	0.0	4	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	CO	18	31/08/2012	Not submitted
1	System architecture document	1.0	5	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	PU	8	31/10/2011	Not submitted
2	Report on product generation test	0.0	5	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	CO	26	30/04/2013	Not submitted
3	Report on quality control checks	0.0	5	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	PU	30	31/08/2013	Not submitted
4	Report on overall functionality test	0.0	5	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	Report	PU	32	31/10/2013	Not submitted
5	Establishment of continuous	0.0	5	DEUTSCHES	Report	PU	32	31/10/2013	Not submitted

	us online operation system at DLR/SWACI			ZENTRUM FUER LUFT - UND RAUMFAHRT EV					
1	Establishment of continuous online operation system at ROB/RWC	0.0	6	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	32	31/10/2013	Not submitted
2	International user workshop documentation	0.0	6	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	24	28/02/2013	Not submitted
3	Report on User Workshop Results	0.0	6	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	30	31/08/2013	Not submitted
4	Report on Long-Term Product Sustainability	0.0	6	KONINKLIJKE STERRENWACHT VAN BELGIE	Report	PU	34	31/12/2013	Not submitted
5	Space Weather Multimedia Show	0.0	GEORG	GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Other	PU	34	31/12/2013	Not submitted
6	AFFECTS Space Weather Mobile Phone App	0.0	GEORG	GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS	Other	PU	34	31/12/2013	Not submitted

Milestones

Milestone no.	Milestone name	Work package no	Lead beneficiary	Delivery date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments
1	Dedicated Web-Interface for EUV data	2	KONINKLIJKE STERRENWACHT VAN BELGIE	31/12/2011	Yes	20/12/2011	
2	Provision of GNSS based ionospheric data	2	DEUTSCHES ZENTRUM FUER LUFT- UND RAUMFAHRT E. V.	31/12/2011	Yes	20/12/2011	

4. Explanation of the use of the resources

During the transitional period the **use of resources** can be edited both in SESAM and in FORCE by those who started to edit their scientific reports before it became available in FORCE. In case of inconsistencies, please contact the coordinator.

GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS

Work Package	Item description	Amount	Explanations
1	Personnel Costs (MGT)	26089.27	D. Dannemann (Admin. Project Management, 4.18 PM), M. Zetzl (Post Doc, 1.73 PM), R. Kanzler (M.Sc, 2.32 PM)
3, 4	Personnel Costs (RTD)	13282.35	E. Bosman (Ph.D, WP3, 1.67 PM), J. Hesemann (Ph.D, WP3, 0.29 PM), M. Venzmer (Ph.D, WP4, 1.09 PM)
2, 3, 4	Travel (RTD)	1490.67	Participation project kick-off in Göttingen (65.90 EUR, 1 person from ASTRUM), presentation on AFFECTS' research areas at project General Meeting in Brussels (1,424.77 EUR, Bosman, Hesemann and Venzmer)
1	Travel (MGT)	2983.03	Organisation of and participation in 1st AFFECTS Steering Committee Meeting in Namur, Belgium (1,660.52 EUR, Bothmer and Dannemann), organisation of and participation in 1st GM and 2nd SC Meeting in Brussels (1,128.50 EUR, Bothmer and Dannemann), Travel to DLR (in Neustrelitz, Germany) to organise the project management (194.01 EUR, Bothmer)
6	Travel (OTHER)	1475.13	Participation project kick-off in Göttingen (238.46 EUR, 2 persons, for collaboration in public outreach activities), presentations on AFFECTS at 2 conferences in Vienna and Brussels (1,146.67 EUR, Bothmer), participation in 1st GM and presentation on the collaboration with RTL Media Group in Brussels (90 EUR, 1 person)
1	Equipment and Consumables (MGT)	1111.68	1 Laptop incl. accessories (233.30 EUR taking into account the depreciation) for set-up and maintenance of website and project wiki, fees for money transfer to Ukraine (10 EUR), support of project kick-off (821.73 EUR), annual fee for website set-up and maintenance (46.65 EUR)
2, 3, 4	Equipment and Consumables (RTD)	3985.39	3 server systems incl. accessories for the AFFECTS research (3,152.78 EUR taking into account the depreciation), costs for the recovery of CME data (39 EUR), fee for abstract submission (33.61 EUR), maintenance of project specified software (760 EUR)
6	Equipment and Consumables (OTHER)	322.30	Mobile addition for server system for real time sun observation (10.85 EUR taking into account the depreciation), postage of dissemination material (62.10 EUR), project specific software for visualization purposes (249.35 EUR)
Total:		50739.82	

KONINKLIJKE STERRENWACHT VAN BELGIE

Work Package	Item description	Amount	Explanations
2, 3	Personnel Costs (RTD)	86022.29	Work performed by: David Berghmans (statutory department head Ph. D., 47.6 hours), Bram Bourgoignie

			(contractual master scientist, 70.0 hours), Benoit Callebaut (contractual master scientist, 1174.2 hours), Matthieu Kretzschmar (contractual Ph.D. scientist, 38.0 hours), Benjamin Mampaey (contractual master scientist, 76.0 hours), Eva Robbrecht (statutory Ph.D. scientist, 9.5 hours), Ronald Van der Linden (statutory director of ROB Ph.D., 1.5 hours), Cis Verbeeck (contractual Ph.D. scientist, 1413.6 hours).
6	Personnel Costs (OTHER)	2713.88	Work performed by: Benoit Callebaut (contractual master scientist, 7.6 hours), Cis Verbeeck (contractual Ph.D. scientist, 76 hours)
2, 3	Travel (RTD)	919.65	AFFECTS kick-off meeting, Göttingen, Germany, 21-23/03/2011 (David Berghmans: 323.50 €, Benoit Callebaut: 381.30 €, Cis Verbeeck: 214.85 €)
6	Travel (OTHER)	2048.26	• Sun 360 Workshop, Kiel, Germany, 25-30/07/2011: AFFECTS poster "The AFFECTS Solar Activity Viewer" (Cis Verbeeck: 1 212.46 €) • European Space Weather Week 8, Namur, Belgium, 28/11-02/12/2011: 1st Steering Committee Meeting, AFFECTS poster "The STAFF Viewer - Easy access to your favorite space weather time series" (Benoit Callebaut: 174.90 €, Cis Verbeeck: 660.90 €)
2	Equipment and Consumables (RTD)	384.06	Two Calleo Lynx servers for the Solar Timelines viewer for AFFECTS (D2.2) (linear depreciation has been taken into account)
Total:		92088.14	

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Work Package	Item description	Amount	Explanations
2	Personnel Costs (RTD)	24000.00	Parnowski (senior researcher, Ph.D.) 2.70 PM Cheremnykh (principal researcher, D.Sci.) 1.63 PM Yatsenko (head of department, D.Sci.) 2.80 PM Kuntsevich (principal researcher, D.Sci.) 2.70 PM Salnikov (senior researcher, Ph.D.) 2.86 PM Kremenetsky (senior researcher, Ph.D.) 2.86 PM Semeniv (junior researcher, Ph.D.) 2.86 PM Polonskaya (engineer-programmer 2nd class) 1.59 PM Total: 20.00 PM Planned: 24000 EUR = 20 PM @ 1200 EUR/PM
4	Personnel Costs (RTD)	27780.00	Parnowski (senior researcher, Ph.D.) 4.85 PM Cheremnykh (principal researcher, D.Sci.) 5.04 PM Yatsenko (head of department, D.Sci.) 3.42 PM Kuntsevich (principal researcher, D.Sci.) 0.50 PM Salnikov (senior researcher, Ph.D.) 2.48 PM Kremenetsky (senior researcher, Ph.D.) 1.70 PM Semeniv (junior researcher, Ph.D.) 2.68 PM Polonskaya (engineer-programmer 2nd class) 2.48 PM Total: 23.15 PM The remaining 1.85 PM were postponed to year 2 to improve collaboration with other beneficiaries Planned: 30000 EUR = 25 PM @ 1200 EUR/PM
4	Travel (RTD)	2192.12	1007.92 – Kick-off meeting, Göttingen, Germany 364.81 – 1st Steering Committee meeting, Namur, Belgium 819.39 – 1st General Meeting, Brussels, Belgium The planned travel to Neustrelitz, Germany for interfacing with DLR was postponed to year 2 to increase its efficiency
6	Travel (OTHER)	3000.00	3*1000 EUR to ESWW8, Namur, Belgium 3 presentations on AFFECTS presented 375.00 — registration fee 2625.00 — travel, accommodation and sustenance
4	Equipment and Consumables	0.00	The planned amount of 6000 EUR was postponed to year 3 due to legal difficulties caused by recent changes to national legislation

	Total:	56972.12	
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FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V

Work Package	Item description	Amount	Explanations
2, 4	Personnel Costs (RTD)	38237.21	Continuous work on the empirical-mathematical tool for derivation of the EUV spectra from SEPS, contributions to establish an international EUV data base (SEE, SOVIM, SolACES) and work on defining SW indices based on EUV radiation 2 scientists at FHG: Werner Konz, 2.13 PM; Raimund Brunner, 1.57 PM
2, 4	Travel (RTD)	3434.93	Kick Off-Meeting in Göttingen March 2011, 3 travellers; 1st GM in Brussels, Feb. 2012, 2 travellers
	Total:	41672.14	

UNIVERSITETET I TROMSOE

Work Package	Item description	Amount	Explanations
2	Personnel Costs (RTD)	18751.59	Salary, Magnar Johnsen, 3 PM, Position: researcher
2	Travel (RTD)	9811.89	Chris Hall: Kick-off meeting, Goettingen (Mar. 2011) Chris Hall: 1st steering committee meeting, Namur (Nov. 2011) Bjørn Ove Husøy, magnetometer installation, Svalbard (Sept. 2011) Bjørnar Hansen, magnetometer installation, Svalbard (Sept. 2011) Bjørnar Hansen, magnetometer service, Dombås (Aug. 2011)
2	Equipment and Consumables	0.00	€12000 applied to be transferred to year 2. Designated for improvement to EISCATs ionosonde on Svalbard for D2.6
	Total:	28563.48	

DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV

Work Package	Item description	Amount	Explanations
2, 3, 4, 5	Personnel Costs (RTD)	77034.76	Salaries for scientists (3.16 person months for WP2, 1.46 person months for WP3, 4.34 person months for WP4, 4.52 person months for WP5). All the members of the project are scientists.
2	Travel (RTD)	557.83	Göttingen (2 person kick-off meeting March 2011, WP2)
	Total:	77592.59	

ASTRIUM GMBH

Work Package	Item description	Amount	Explanations
2	Personnel Costs (RTD)	2963.90	28.19 hours of W. Pfeffer
2	Travel (RTD)	228.75	Kick-Off Meeting, Göttingen, March 2011, 1 person
	Total:	3192.65	

Attachments	AFFECTS_Periodic_Report_part1_Attachment.pdf, Periodic report_AFFECTS_year1_24052012_final.pdf
Grant Agreement number:	263506
Project acronym:	AFFECTS
Project title:	Advanced Forecast For Ensuring Communications Through Space
Funding Scheme:	CP
Project starting date:	01/03/2011
Project end date:	28/02/2014
Name of the scientific representative of the project's coordinator and organisation:	Dr. Volker Bothmer GEORG-AUGUST-UNIVERSITAET GOETTINGEN STIFTUNG OEFFENTLICHEN RECHTS
Period covered - start date:	01/03/2011
Period covered - end date:	29/02/2012
Name	
Date	23/08/2012

This declaration was visaed electronically by Volker BOTHMER (ECAS user name nbothmvo) on 23/08/2012