CARBON BASED SMART SYSTEM FOR WIRELESS APPLICATION

Start Date : 01/09/12
Project n° 318352 **Duration : 36 months**

Topic addressed : Very advanced nanoelectronic components: design, engineering, technology and manufacturability

WORK PACKAGE 7 : Project management

DELIVERABLE D7.10 & D7.21

Progress Management Reports #2
Covered period: T0+6 – T0+12 & Updated Implementation and Financial Plans

Due date : T0+12 **Submission date : T0+13**

Lead contractor for this deliverable: TRT

Dissemination level : PU – Public

WORK PACKAGE 7: Project management

PARTNERS ORGANISATION APPROVAL

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CHANGE RECORD SHEET

REVISION LETTER	DATE	PAGE NUMBER	DESCRIPTION
Template			
V1	31/10/2013	19	All partners contribution
V2	13/01/2014	19	Correction after review meeting 1

CONTENTS

1 JUSTIFICATION OF MAJOR COST ITEMS AND RESSOURCES

1.1 BRIEF DESCIPTION OF WORK, MAJOR COST ITEMS AND RESSOURCES

1.1.1 TRT

Brief description of work

WP 1	TRT has participated to the establishment of the main requirements (frequency, bandwidth), the detailed elementary components specifications and also to the definition of the 1st and second demonstrators
WP 2	TRT has partipated to the design definition for the microwave CNT amplifier, CNT switch the graphène devices
WP 3	TRT has been involved in the characterisation of CNT and graphene materials It has also developed a process flow of the RF switch based on the CNT and the first fabrication run was started Contribution the knowledge of CNT growth for filter fabrication
WP 6	TRT has put a lot of work on the construction of the Nano-RF website. The public area of the website describes the stakes of the project, the partners, the main lines of the project and links it to relevant references. The private area includes confidential information and allows the partners to exchange safely voluminous data.
WP 7	TRT has been strongly involved in the establishment of the Grant Agreement and has driven the negotiations to find a commitment of all partners on a Consortium Agreement. As coordinator, TRT has launched the project with a successful Kick-Off Meeting organised in Paris area. Since, it closely manages the evolution of the project by following the costs, the delays of the deliverables, and by establishing correcting actions when necessary. Redaction of progress activity and management reports.

Major Cost Items

- Personal costs : 13.75 person-months

Tables of costs

M1 - M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
TRT	Personnel costs	726 809	74 131	0	23 424	0	97 555	13,42%	629 254
	subcontracting	9 000	0	0	0	0	0	0,00%	9 000
	other direct costs	151 814	10 584	0	26 191	0	36 775	24,22%	115 039
	indirects costs	848 041	83 776	0	26 471	0	110 247	13,00%	737 794
	total	**1 735 664**	**168 491**	**0**	**76 086**	**0**	**244 577**	**14,09%**	**1 491 087**

Table 1 : TRT Table of costs

Table of Human Resourcess

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
TRT	WP 1	7,00	0,50	0,00					0,50	7%	6,50
	WP 2	16,00	2,50	2,98					5,48	34%	10,52
	WP 3	26,00	1,00	5,00					6,00	23%	20,00
	WP 4	13,00	0,00	0,00					0,00	0%	13,00
	WP 5	14,00	0,00	0,00					0,00	0%	14,00
	WP 6	4,00	0,31	0,60					0,91	23%	3,09
	WP 7	14,00	0,46	0,40					0,86	6%	13,14
	Total	94,00	4,77	8,98	0,00	0,00	0,00	0,00	13,75	15%	80,25

Table 2 : TRT Table of Human Resources

1.1.2 CHALMERS

Brief description of work

WP 1	Specification of dimension requirements (diameter, aspect ratio, pitch).
WP 2	
WP 3	CNT growth, TCVD graphene Growth and transfer of CNT bundles into TSVs for 3D interconnection Contribute knowledge about graphene growth for RF devices
WP 6	
WP 7	

Major Cost Items

- Personal costs : 9.80 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
CHALMERS	Personnel costs	350 000	69 091	0	0	0	69 091	19,7%	280 909
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	172 825	41 524	0	0	0	41 524	24,0%	131 301
	indirects costs	313 695	66 369	0	0	0	66 369	21,2%	247 326
	total	836 520	176 984	0	0	0	176 984	21,2%	659 536

Table 3 : CHALMERS Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
CHALMERS	WP 1	4,00	3,50	0,50					4,00	100%	0,00
	WP 2	0,00	0,00	0,00					0,00	0%	0,00
	WP 3	36,00	0,00	7,30					7,30	20%	28,70
	WP 4	16,00	0,00	0,00					0,00	0%	16,00
	WP 5	5,00	0,00	0,00					0,00	0%	5,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	9,00	0,00	2,00					2,00	22%	7,00
	Total	70,00	3,50	9,80	0,00	0,00	0,00	0,00	13,30	19%	56,70

Table 4: CHALMERS Table of Human Resources

1.1.3 FORTH

Brief description of work

WP 1	Participation to the definition of the measurement techniques.
WP 2	
WP 3	fabrication of supporting structures for the FET develop fabrication modules for graphene devices, fabricate Schottky
WP 6	
WP 7	

Major Cost Items

- Personal costs : 16.83 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
FORTH	Personnel costs	215 000	44 089	0	0	0	44 089	20,5%	170 911
	subcontracting	3 000	0	0	0	0	0	0,0%	3 000
	other direct costs	90 000	5 828	0	0	0	5 828	6,5%	84 172
	indirects costs	204 250	36 594	0	0	0	36 594	17,9%	167 656
	total	512 250	86 511	0	0	0	86 511	16,9%	425 739

Table 5 : FORTH Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
FORTH	WP 1	2,00	2,00	0,00					2,00	100%	0,00
	WP 2	0,00	0,00	0,00					0,00	0%	0,00
	WP 3	58,00	5,90	16,83					22,73	39%	35,27
	WP 4	3,00	0,00	0,00					0,00	0%	3,00
	WP 5	4,00	0,00	0,00					0,00	0%	4,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	5,00	0,00	0,00					0,00	0%	5,00
	Total	72,00	7,90	16,83	0,00	0,00	0,00	0,00	24,73	34%	47,27

Table 6: FORTH Table of Human Resources

1.1.4 LAAS

Brief description of work

WP 1	Participation to the specifications of the main requirements (frequency, bandwidth) Participation in the detailed elementary components specifications
WP 2	Design power switch Design CNTfilter/oscillator Design LNA
WP 3	RF graphene properties characterization employing graphene loaded CPW structure
WP 6	
WP 7	

Major Cost Items

- Personal costs : 11.88 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
LAAS	Personnel costs	237 600	57 910	0	0	0	57 910	24,4%	179 690
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	90 000	4 000	0	0	0	4 000	4,4%	86 000
	indirects costs	196 560	37 146	0	0	0	37 146	18,9%	159 414
	total	**524 160**	**99 056**	**0**	**0**	**0**	**99 056**	**18,9%**	**425 104**

Table 7: LAAS Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
LAAS	WP 1	6,00	3,66	0,00					3,66	61%	2,34
	WP 2	2,00	0,00	2,00					2,00	100%	0,00
	WP 3	24,00	0,00	6,22					6,22	26%	17,78
	WP 4	12,00	0,00	0,00					0,00	0%	12,00
	WP 5	1,00	0,00	0,00					0,00	0%	1,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	3,00	0,00	0,00					0,00	0%	3,00
	Total	48,00	3,66	8,22	0,00	0,00	0,00	0,00	11,88	25%	36,12

Table 8: LAAS Table of Human Resources

1.1.5 UPMC

Brief description of work

WP 1	
WP 2	Design the CNT antenna
WP 3	RF material test structures for classical material parameters (epsilon, mu, sigma and resistance/inductance/capacitance) characterisation
WP 6	
WP 7	

Major Cost Items

- Personal costs : 3.07 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
UPMC	Personnel costs	144 100	18 249	0	0	0	18 249	12,7%	125 851
	subcontracting	39 200	0	0	0	0	0	0,0%	39 200
	other direct costs	23 000	0	0	2 098	0	2 098	9,1%	20 902
	indirects costs	100 260	0	0	0	0	0	0,0%	100 260
	total	306 560	18 249	0	2 098	0	20 347	6,6%	286 213

Table 9 : UPMC Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
UPMC	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	17,00	2,60	2,43					5,03	30%	11,97
	WP 3	6,00	0,00	0,64					0,64	11%	5,36
	WP 4	15,00	0,00	0,00					0,00	0%	15,00
	WP 5	1,00	0,00	0,00					0,00	0%	1,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	0,00	0,00	0,00					0,00	0%	0,00
	Total	39,00	2,60	3,07	0,00	0,00	0,00	0,00	5,67	15%	33,33

Table 10: UPMC Table of Human Resources

1.1.6 IMT

Brief description of work

WP 1	Participation to the identifications of T/R modules specifications (both CNT and graphene based)
WP 2	Design the CNT transistor Design capacitive CNT switch Design the parameters of the CNT array Design graphene antenna Design graphène FET, and graphène mixer/oscillator
WP 3	Contribute to technology nodes (opto litho mask fabrication)
WP 6	
WP 7	

Major Cost Items

- Personal costs : 13.17 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
IMT	Personnel costs	219 300	134 017	0	3 766	0	137 783	62,8%	81 517
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	58 000	35 017	0	665	0	35 682	61,5%	22 318
	indirects costs	55 460	33 806	0	509	0	34 315	61,9%	21 145
	total	332 760	202 840	0	4 940	0	207 780	62,4%	124 980

Table 11 : IMT Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
IMT	WP 1	2,00	0,00	2,00					2,00	100%	0,00
	WP 2	25,00	4,90	10,17					15,07	60%	9,93
	WP 3	5,00	1,00	0,50					1,50	30%	3,50
	WP 4	15,00	0,00	0,00					0,00	0%	15,00
	WP 5	2,50	0,00	0,00					0,00	0%	2,50
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	1,50	0,10	0,50					0,60	40%	0,90
	Total	51,00	6,00	13,17	0,00	0,00	0,00	0,00	19,17	38%	31,83

Table 12: IMT Table of Human Resources

1.1.7 GI

Brief description of work

WP 1	
WP 2	
WP 3	Provide exfoliated graphene & transfer 2D material to arbitrary substrates or over Apertures
WP 6	
WP 7	

Major Cost Items

- Personal costs : 3,00 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
GI	Personnel costs	109 863	13 920	0	626	0	14 546	13,2%	95 317
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	39 191	39	0	776	0	815	2,1%	38 376
	indirects costs	71 370	28 679	0	2 604	0	31 283	43,8%	40 087
	total	220 424	42 638	0	4 006	0	46 644	21,2%	173 780

Table 13 : GI Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
GI	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	0,00	0,00	0,00					0,00	0%	0,00
	WP 3	19,00	1,50	2,50					4,00	21%	15,00
	WP 4	1,00	0,00	0,00					0,00	0%	1,00
	WP 5	1,00	0,00	0,00					0,00	0%	1,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	0,00	0,50	0,50					1,00	0%	-1,00
	Total	21,00	2,00	3,00	0,00	0,00	0,00	0,00	5,00	24%	16,00

Table 14: GI Table of Human Resources

1.1.8 TAS

Brief description of work

WP 1	Specifications of the main requirements (frequency, bandwidth) Identifications of T/R modules specifications (both CNT and graphene based) Specification of high frequency performance requirements. Definition of the 1st and second demonstrators
WP 2	Provide antenna parameters and help at graphene antenna design Provide graphène parameters and design test devices to find graphene properties to be used in the design
WP 3	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 0,08 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
TSA	Personnel costs	30 000	985	0	0	0	985	3,3%	29 015
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	3 000	285	0	0	0	285	9,5%	2 715
	indirects costs	37 000	1 182	0	0	0	1 182	3,2%	35 818
	total	**70 000**	**2 452**	**0**	**0**	**0**	**2 452**	**3,5%**	**67 548**

Table 15 : TAS Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
TSA	WP 1	2,00	0,00	0,08					0,08	4%	1,92
	WP 2	1,00	0,00	0,00					0,00	0%	1,00
	WP 3	0,00	0,00	0,00					0,00	0%	0,00
	WP 4	0,00	0,00	0,00					0,00	0%	0,00
	WP 5	2,00	0,00	0,00					0,00	0%	2,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	2,00	0,00	0,00					0,00	0%	2,00
	Total	7,00	0,00	0,08	0,00	0,00	0,00	0,00	0,08	1%	6,92

Table 16: TAS Table of Human Resources

1.1.9 SHT

Brief description of work

WP 1	
WP 2	
WP 3	optimization of PECVD growth process of single CNTs on conductive & non-conductive substrates Contribution the knowledge of CNT growth

	Growth of CNTs for filter fabrication PECVD growth of CNTs for antenna fabrication Contribution of knowledge on graphene growth
WP 6	
WP 7	

Major Cost Items

- Personal costs : 8.60 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
SHT	Personnel costs	155 000	56 547	0	0	0	56 547	36,5%	98 453
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	115 562	13 250	0	0	0	13 250	11,5%	102 312
	indirects costs	162 337	41 878	0	0	0	41 878	25,8%	120 459
	total	**432 899**	**111 675**	**0**	**0**	**0**	**111 675**	**25,8%**	**321 224**

Table 17 : SHT Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
SHT	**WP 1**	**2,00**	0,60	0,40					**1,00**	**50%**	**1,00**
	WP 2	**1,00**	0,00	0,00					**0,00**	**0%**	**1,00**
	WP 3	**29,00**	3,50	7,80					**11,30**	**39%**	**17,70**
	WP 4	**0,00**	0,00	0,00					**0,00**	**0%**	**0,00**
	WP 5	**2,00**	0,00	0,00					**0,00**	**0%**	**2,00**
	WP 6	**0,00**	0,30	0,20					**0,50**	**0%**	**-0,50**
	WP 7	**2,00**	0,30	0,20					**0,50**	**25%**	**1,50**
	Total	**36,00**	**4,70**	**8,60**	**0,00**	**0,00**	**0,00**	**0,00**	**13,30**	**37%**	**22,70**

Table 18: SHT Table of Human Resources

1.1.10 UNIVPM

Brief description of work

WP 1	Multiphysics simulation of CNT transistor Multiphysics design of CNT NEMS switch Design the graphene detector
WP 2	
WP 3	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 4,50 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
UNIVPM	Personnel costs	109 617	26 761	0	0	4 821	31 582	28,8%	78 035
	subcontracting	1 000	0	0	0	0	0	0,0%	1 000
	other direct costs	44 000	14 108	0	0	0	14 108	32,1%	29 892
	indirects costs	92 170	0	0	0	0	0	0,0%	92 170
	total	246 787	40 869	0	0	4 821	45 690	18,5%	201 097

Table 19 : UNIVPM Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
UNIVPM	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	24,00	2,00	4,00					6,00	25%	18,00
	WP 3	0,00	0,00	0,00					0,00	0%	0,00
	WP 4	10,00	0,00	0,00					0,00	0%	10,00
	WP 5	0,00	0,00	0,00					0,00	0%	0,00
	WP 6	5,00	0,50	0,50					1,00	20%	4,00
	WP 7	0,00	0,00	0,00					0,00	0%	0,00
	Total	39,00	2,50	4,50	0,00	0,00	0,00	0,00	7,00	18%	32,00

Table 20: UNIVPM Table of Human Resources

1.1.11 LiU

Brief description of work

WP 1	
WP 2	Provide physical properties of graphene on SiC wafer and help at graphène antenna design Will help to the design to all graphène devices to complay the graphene on wafer characterstics
WP 3	Graphene growth by high temperature decomposition of SiC
WP 6	
WP 7	

Major Cost Items

- Personal costs : 5,5 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
LiU	Personnel costs	120 000	46 474	0	0	0	46 474	38,7%	73 526
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	50 000	5 235	0	0	0	5 235	10,5%	44 765
	indirects costs	102 000	31 026	0	0	0	31 026	30,4%	70 974
	total	272 000	82 735	0	0	0	82 735	30,4%	189 265

Table 21 : LiU Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
LiU	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	2,00	0,00	0,00					0,00	0%	2,00
	WP 3	20,00	1,00	5,50					6,50	33%	13,50
	WP 4	1,00	0,00	0,00					0,00	0%	1,00
	WP 5	1,00	0,00	0,00					0,00	0%	1,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	0,00	0,00	0,00					0,00	0%	0,00
	Total	24,00	1,00	5,50	0,00	0,00	0,00	0,00	6,50	27%	17,50

Table 22: LiU Table of Human Resources

1.1.12 ICN

Brief description of work

WP 1	
WP 2	Design resistive switch
WP 3	CNT: Micro-Raman and Brillouin scattering for structural and study of frequency ranges. Near-field optical/thermal microscope and 3-omega to study thermal loss mechanisms. Pump-and-probe experiments to study lifetimes of phonon and phonon dynamics affecting switching.
WP 6	
WP 7	

Major Cost Items

- Personal costs : 3.68 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
ICN	Personnel costs	138 653	14 197	0	4 752	0	18 949	13,7%	119 704
	subcontracting	1 499	0	0	0	0	0	0,0%	1 499
	other direct costs	70 350	2 507	0	1 404	0	3 911	5,6%	66 439
	indirects costs	125 399	10 022	0	3 693	0	13 716	10,9%	111 683
	total	335 901	26 726	0	9 849	0	36 575	10,9%	299 326

Table 23 : ICN Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
ICN	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	1,00	0,00	1,00					1,00	100%	0,00
	WP 3	18,00	0,00	2,41					2,41	13%	15,59
	WP 4	0,00	0,00	0,00					0,00	0%	0,00
	WP 5	10,00	0,00	0,00					0,00	0%	10,00
	WP 6	1,50	0,00	0,00					0,00	0%	1,50
	WP 7	1,00	0,27	0,27					0,55	55%	0,45
	Total	31,50	0,27	3,68	0,00	0,00	0,00	0,00	3,96	13%	27,54

Table 24: ICN Table of Human Resources

1.1.13 Tyndall

Brief description of work

WP 1	
WP 2	
WP 3	High k oxide and dielectric technology implementation
WP 6	
WP 7	

Major Cost Items

- Personal costs : 5,88 person-months

Tables of costs

M1-M12		Budget	Type of Activity				TOTAL	% Spent	Remaining budget
			RTD	DEM	MGT	OTHER			
Tyndall	Personnel costs	189 109	54 617	0	0	0	54 617	28,9%	134 492
	subcontracting	0	0	0	0	0	0	0,0%	0
	other direct costs	58 200	17 931	0	0	0	17 931	30,8%	40 269
	indirects costs	148 385	43 528	0	0	0	43 528	29,3%	104 857
	total	**395 694**	**116 076**	**0**	**0**	**0**	**116 076**	**29,3%**	**279 618**

Table 25 : Tyndall Table of costs

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							% Total	Remaining PM
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
Tyndall	WP 1	0,00	0,00	0,00					0,00	0%	0,00
	WP 2	0,00	0,00	0,00					0,00	0%	0,00
	WP 3	20,00	4,50	2,88					7,38	37%	12,62
	WP 4	14,00	0,00	2,00					2,00	14%	12,00
	WP 5	2,00	0,00	0,00					0,00	0%	2,00
	WP 6	0,00	0,00	0,00					0,00	0%	0,00
	WP 7	8,50	0,00	1,00					1,00	12%	7,50
	Total	44,50	4,50	5,88	0,00	0,00	0,00	0,00	10,38	23%	34,12

Table 26: Tyndall Table of Human Resources

1.2 TABULAR OVERVIEW OF BUDGETED AND ACTUAL COSTS

Partner	Total Budget	Actual cost							% Total	Remaining Budget
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
TRT	1 735 664,00	82 384,00	162 193,00	0,00	0,00	0,00	0,00	244 577,00	14,09%	1 491 087,00
CHALMERS	836 520,00	65 091,00	111 893,00	0,00	0,00	0,00	0,00	176 984,00	21,16%	659 536,00
FORTH	512 250,00	36 507,93	50 003,07	0,00	0,00	0,00	0,00	86 511,00	16,89%	425 739,00
LAAS	524 160,00	44 240,00	54 816,00	0,00	0,00	0,00	0,00	99 056,00	18,90%	425 104,00
UPMC	306 560,00	1 416,40	18 930,60	0,00	0,00	0,00	0,00	20 347,00	6,64%	286 213,00
IMT	332 760,00	42 124,21	165 655,79	0,00	0,00	0,00	0,00	207 780,00	62,44%	124 980,00
GI	248 000,00	27 576,00	19 068,00	0,00	0,00	0,00	0,00	46 644,00	18,81%	201 356,00
TSA	70 000,00	0,00	2 452,00	0,00	0,00	0,00	0,00	2 452,00	3,50%	67 548,00
SHT	432 899,00	41 933,00	69 742,00	0,00	0,00	0,00	0,00	111 675,00	25,80%	321 224,00
UNIVPM	246 787,00	29 396,98	16 293,02	0,00	0,00	0,00	0,00	45 690,00	18,51%	201 097,00
LiU	272 000,00	19 476,92	63 258,08	0,00	0,00	0,00	0,00	82 735,00	30,42%	189 265,00
ICN	335 901,00	15 511,63	21 063,37	0,00	0,00	0,00	0,00	36 575,00	10,89%	299 326,00
Tyndall	395 694,00	45 990,40	70 085,60	0,00	0,00	0,00	0,00	116 076,00	29,33%	279 618,00
Total Cost	6 249 195,00	451 648,47	825 453,53	0,00	0,00	0,00	0,00	1 277 102,00	20,44%	4 972 093,00

Table 27 Tabular overview of budgeted and actual costs

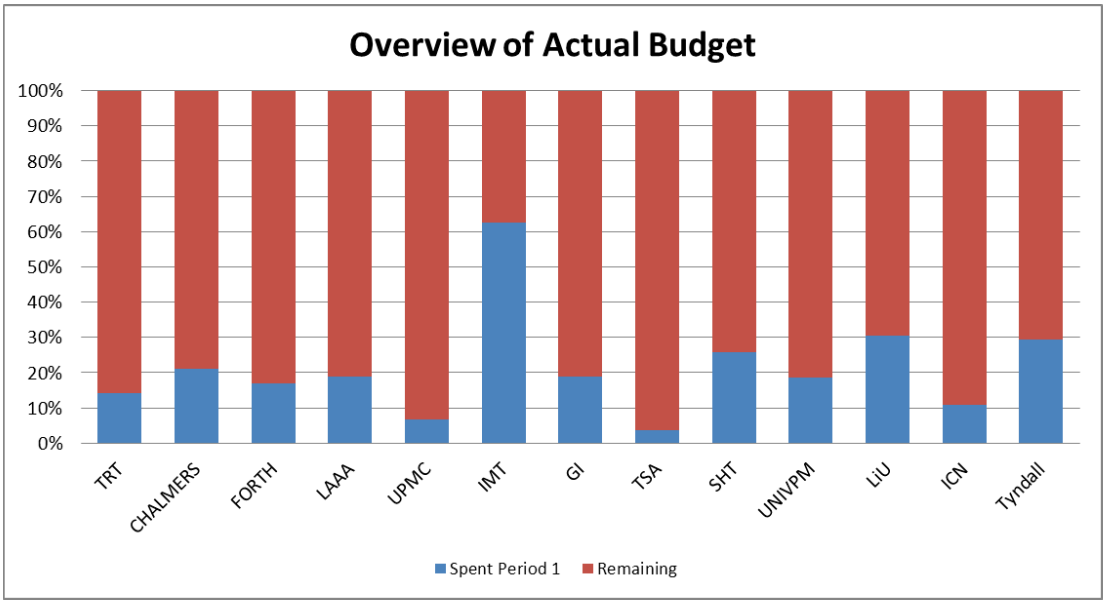

Figure 1 : Actual spent budget vs planned total budget for each partner

1.3 TABULAR OVERVIEW OF PLANNED AND ACTUAL HUMAN RESOURCES

Partner	Planned PM	Actual Person-Months							% Total	Remaining PM
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
TRT	94,00	4,77	8,98	0,00	0,00	0,00	0,00	13,75	14,63%	80,25
CHALMERS	70,00	3,50	9,80	0,00	0,00	0,00	0,00	13,30	19,00%	56,70
FORTH	72,00	7,90	16,83	0,00	0,00	0,00	0,00	24,73	34,35%	47,27
LAAS	46,00	3,66	8,22	0,00	0,00	0,00	0,00	11,88	25,83%	34,12
UPMC	39,00	2,60	3,07	0,00	0,00	0,00	0,00	5,67	14,54%	33,33
IMT	51,00	6,00	13,17	0,00	0,00	0,00	0,00	19,17	37,59%	31,83
GI	21,00	2,00	3,00	0,00	0,00	0,00	0,00	5,00	23,81%	16,00
TSA	7,00	0,00	0,08	0,00	0,00	0,00	0,00	0,08	1,14%	6,92
SHT	36,00	4,70	8,60	0,00	0,00	0,00	0,00	13,30	36,94%	22,70
UNIVPM	39,00	2,50	4,50	0,00	0,00	0,00	0,00	7,00	17,95%	32,00
LiU	24,00	1,00	5,50	0,00	0,00	0,00	0,00	6,50	27,08%	17,50
ICN	31,50	0,27	4,68	0,00	0,00	0,00	0,00	4,95	15,71%	26,55
Tyndall	44,50	4,50	5,88	0,00	0,00	0,00	0,00	10,38	23,33%	34,12
Total	575,00	43,40	92,31	0,00	0,00	0,00	0,00	135,71	23,60%	439,29

Table 28 : Overview of planned and actual human resources per partner

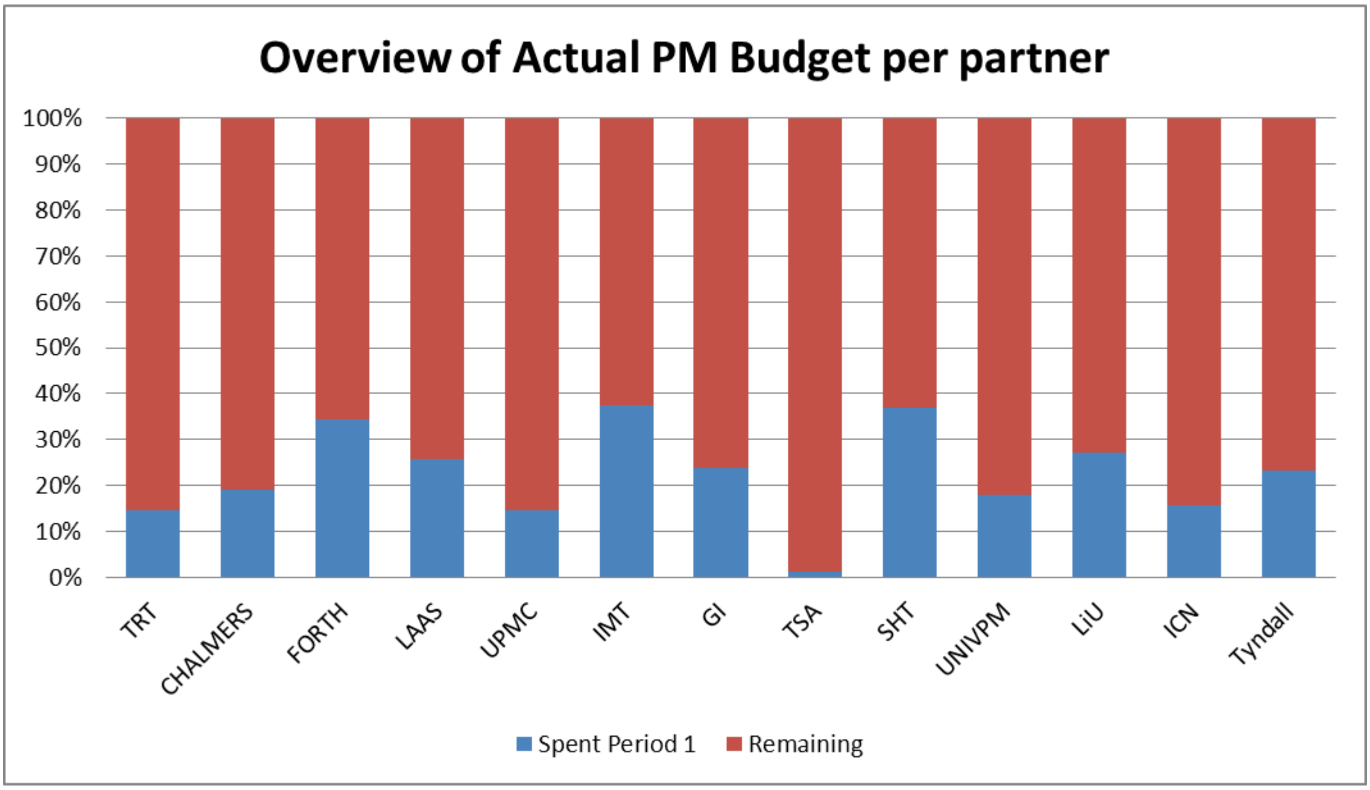

Figure 2 : Actual spent PM vs total budgeted PM for each partner

Partner	Planned PM	Actual Person-Months							% Total	Remaining PM
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
WP1	**22,00**	10,26	2,98	0,00	0,00	0,00	0,00	13,24	60,18%	8,76
WP2	**88,00**	12,00	22,58	0,00	0,00	0,00	0,00	34,58	39,30%	53,42
WP3	**261,00**	18,40	58,58	0,00	0,00	0,00	0,00	76,98	29,49%	184,02
WP4	**104,00**	0,00	2,00	0,00	0,00	0,00	0,00	2,00	1,92%	102,00
WP5	**43,50**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00%	43,50
WP6	**10,50**	1,11	1,30	0,00	0,00	0,00	0,00	2,41	22,95%	8,09
WP7	**48,00**	1,63	4,87	0,00	0,00	0,00	0,00	6,50	13,54%	41,50
Total	**577,00**	**43,40**	**92,31**	**0,00**	**0,00**	**0,00**	**0,00**	**135,71**	**23,52%**	**441,29**

Table 29 : overview of planned and actual human resources per Workpackage

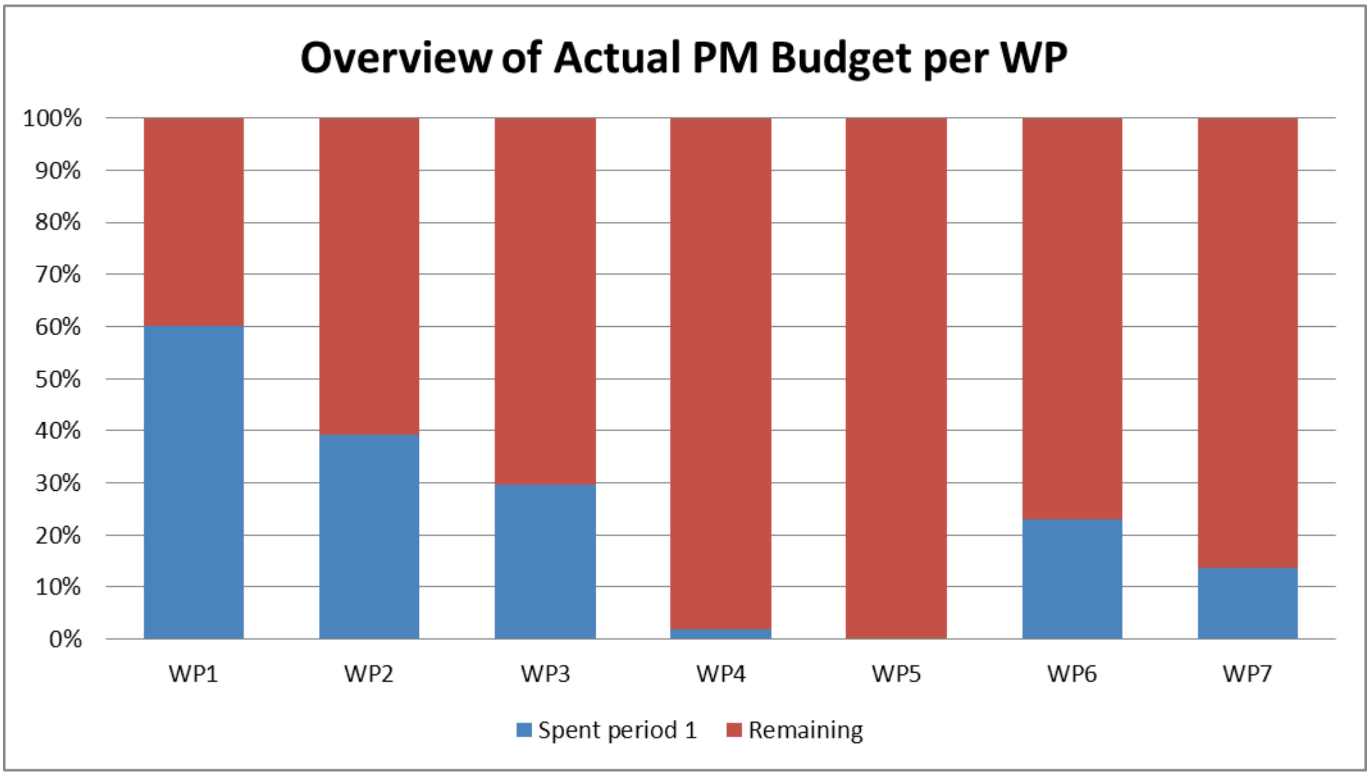

Figure 3 : Actual spent PM vs total budgeted PM for each workpackage

1.4 MAJOR DEVIAVTIONS

At this stage of the project, no major deviation has occurred in term of cost or human resources.

	Planned	Actual							% Total	Remaining
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Total		
Cost	**6 249 195,00**	451 648,47	580876,53	0,00	0,00	0,00	0,00	1032525,00	16,52%	5 216 670,00
PM	**577,00**	45,42	90,31	0,00	0,00	0,00	0,00	135,73	23,52%	441,27

Table 30 : Summary of planned and actual costs and PM expenses

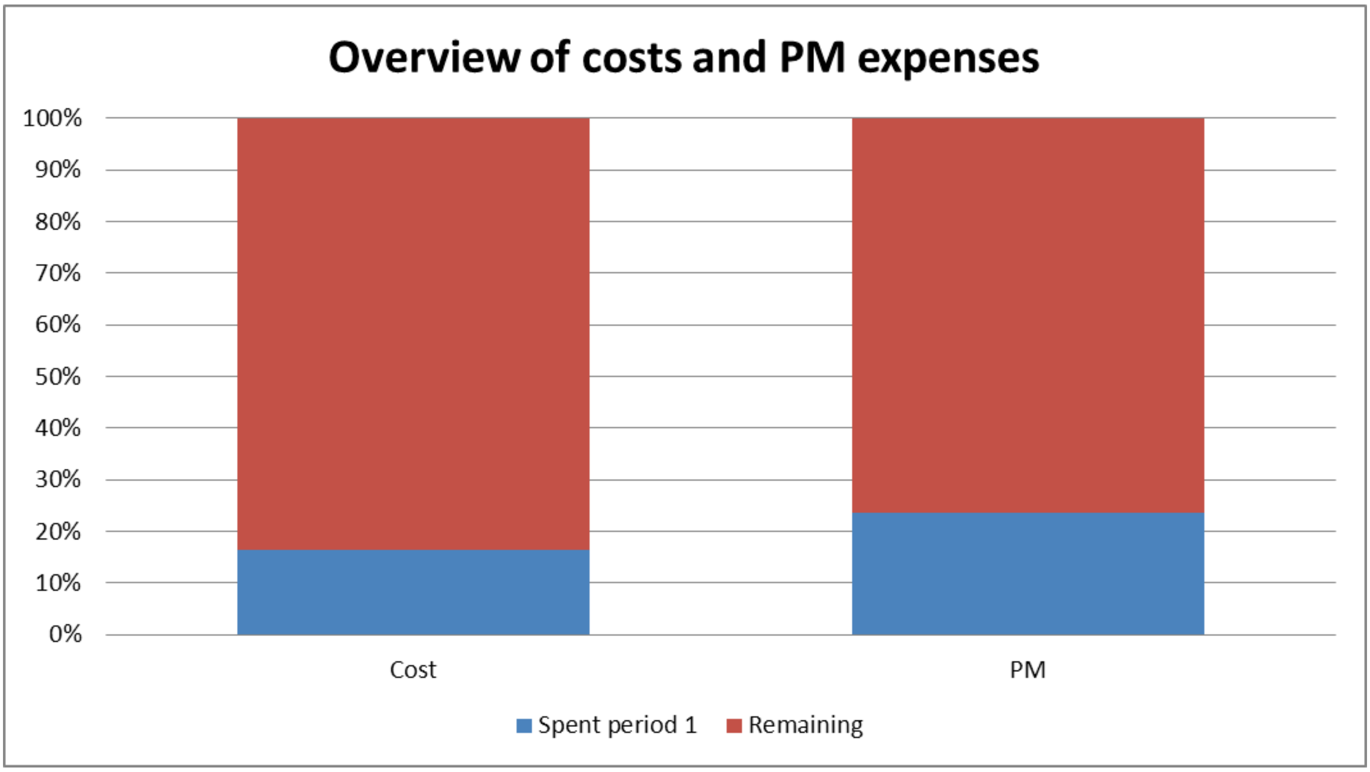

Figure 4 : Overview of cost and PM expenses

1.5 PRECISION ON WP1