



CARBON BASED SMART SYSTEM FOR WIRELESS APPLICATION



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Project n° 318352

Duration : 48 months

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

WORK PACKAGE 7 : Project management

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**WORK PACKAGE 7: Project management****PARTNERS ORGANISATION APPROVAL**

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CHANGE RECORD SHEET

REVISION LETTER	DATE	PAGE NUMBER	DESCRIPTION
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V1	07/10/2016	15	All partners contribution

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1 JUSTIFICATION OF MAJOR COST ITEMS AND RESSOURCES

1.1 BRIEF DESCRIPTION OF WORK, MAJOR COST ITEMS AND RESSOURCES

1.1.1 TRT

Brief description of work

WP 2	TRT has participated 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 4	TRT has been strongly involved on test activities. Contribution for the characterization of different devices (CNT and Graphene FET, CNT RF switch, CNT based filter, CNT and graphene antenna, Graphene detector). Leading the task concerning the CNT interconnects characterization.
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 : 18.33 person-months

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months							Total	% Total	Remaining PM	
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7				
TRT	WP 1	7,00	0,50	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,50	7%	6,50
	WP 2	16,00	2,50	2,98	0,60	2,00	0,00	0,00	0,00	0,00	8,08	51%	7,92
	WP 3	26,00	1,00	5,00	15,51	23,64	5,00	2,00	2,00	7,64	59,79	230%	-33,79
	WP 4	13,00	0,00	0,00	0,30	2,00	0,50	9,00	3,00	14,80	114%	-1,80	
	WP 5	14,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	4,00	29%	10,00	
	WP 6	4,00	0,31	0,60	0,50	1,00	0,50	0,00	1,00	3,91	98%	0,09	
	WP 7	14,00	0,46	0,40	0,70	4,21	1,00	3,00	2,69	12,46	89%	1,54	
	Total	94,00	4,77	8,98	17,61	32,85	7,00	14,00	18,33	103,54	110%	-9,54	

Table 1 : TRT Table of Human Resources

1.1.2 CHALMERS

Brief description of work

WP 2	
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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 4	Contribution for the task concerning the CNT interconnects characterization
WP 6	
WP 7	

Major Cost Items

- Personal costs : 0 person-months

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	0,00	0,00	0,00	0,00	0,00	4,00	100%	0,00
	WP 2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 3	36,00	0,00	7,30	6,10	7,25	9,90	0,00	0,00	30,55	85%	5,45
	WP 4	16,00	0,00	0,00	0,00	0,00	0,50	0,00	0,00	0,50	3%	15,50
	WP 5	5,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	5,00
	WP 6	0,00	0,00	0,00	0,00	0,50	0,50	0,00	0,00	1,00	0%	-1,00
	WP 7	9,00	0,00	2,00	0,00	0,25	2,25	0,00	0,00	4,50	50%	4,50
	Total	70,00	3,50	9,80	6,10	8,00	13,15	0,00	40,55	58%	29,45	

1.1.3 FORTH

Brief description of work

WP 2	
WP 3	fabrication of supporting structures for the FET develop fabrication modules for graphene devices, fabricate Schottky
WP4	Contribution for the characterization of different devices : CNT and Graphene FET, Graphene detector
WP 6	
WP 7	

Major Cost Items

- Personal costs : 44.44 person-months

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	Period 7			Total
FORTH	WP 1	2,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	100%	0,00
	WP 2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 3	72,00	5,90	16,83	5,00	6,33	9,18	9,00	38,51	90,75	126%	-18,75
	WP 4	8,00	0,00	0,00	2,02	0,00	2,00	2,00	1,94	7,96	100%	0,04
	WP 5	5,00	0,00	0,00	0,00	0,00	0,00	0,00	2,99	2,99	60%	2,01
	WP 6	3,00	0,00	0,00	0,00	2,00	0,00	0,00	1,00	3,00	100%	0,00
	WP 7	3,00	0,00	0,00	0,00	1,43	1,07	0,50	0,00	3,00	100%	0,00
	Total	93,00	7,90	16,83	7,02	9,76	12,25	11,50	44,44	109,70	118%	-16,70

Table 2: FORTH Table of Human Resources

1.1.4 LAAS

Brief description of work

WP 2	Design power switch Design CNTfilter/oscillator Design LNA
WP 3	RF graphene properties characterization employing graphene loaded CPW structure
WP 4	LAAS is the WP4 leader and lead the task concerning the characterization of the CNT RF switch. Contribution for the characterization of different devices (CNT and Graphene FET, CNT RF switch, CNT based filter, graphene antenna, graphene detector).
WP 6	
WP 7	

Major Cost Items

- Personal costs : 6.42 person-months

Table of Human Resources

Partner	WP	Planned PM	Actual Person-Months								% Total	Rem aining PM	
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Total			
LAAS	WP 1	4,00	5,66	0,00	0,00	0,00	0,00	0,00	0,00	0,00	5,66	142%	-1,66
	WP 2	1,00	0,00	0,00	0,00	0,00	0,43	0,00	0,00	0,00	0,43	43%	0,57
	WP 3	13,00	0,00	6,22	4,56	4,45	1,27	0,00	0,00	0,00	16,50	127%	-3,50
	WP 4	12,00	0,00	0,00	1,84	2,22	2,05	1,59	2,99	0,00	10,69	89%	1,31
	WP 5	2,00	0,00	0,00	0,00	0,00	0,00	0,83	2,26	0,00	3,09	155%	-1,09
	WP 6	1,00	0,00	0,00	0,00	0,40	0,12	0,12	0,27	0,00	0,91	91%	0,09
	WP 7	2,00	0,00	0,00	0,56	0,12	0,47	0,41	0,90	0,00	2,46	123%	-0,46
	Total	35,00	5,66	6,22	6,96	7,19	4,34	2,95	6,42	39,74	114%	-4,74	

Table 3: LAAS Table of Human Resources

1.1.5 UPMC

Brief description of work

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 4	UPMC lead the activity concerning the characterization of the CNT based filter. Contribution also for the characterization of the CNT and graphene antenna and CNT/Graphene FET.
WP 6	
WP 7	

Major Cost Items

- Personal costs : 10.50 person-months

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	Period 7	Total			
UPMC	WP 1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	17,00	2,60	2,43	1,30	0,00	0,00	0,00	0,00	0,00	6,33	37%	10,67
	WP 3	6,00	0,00	0,64	0,20	0,80	0,00	0,00	0,00	3,50	5,14	86%	0,86
	WP 4	15,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6,00	6,00	40%	9,00
	WP 5	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	100%	0,00
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 7	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
Total	39,00	2,60	3,07	1,50	0,80	0,00	0,00	0,00	10,50	18,47	47%	20,53	

Table 4: UPMC Table of Human Resources

1.1.6 IMT

Brief description of work

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 4	IMT has been strongly involved on test activities. Contribution for the characterization of different devices (CNT and Graphene FET, CNT RF switch, CNT based filter, CNT and graphene antenna, Graphene detector). Leading the task concerning the task concerning the graphene detector characterization.
WP 6	
WP 7	

Major Cost Items

- Personal costs : 14.81 person-months

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	Period 7	Total			
IMT	WP 1	2,00	0,00	2,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	100%	0,00
	WP 2	25,00	4,90	10,17	5,00	3,87	0,10	0,30	2,16	26,50	106%	-1,50	
	WP 3	5,00	1,00	0,50	0,00	2,50	0,50	0,40	1,60	6,50	130%	-1,50	
	WP 4	15,00	0,00	0,00	0,00	1,90	1,90	3,05	9,25	16,10	107%	-1,10	
	WP 5	2,50	0,00	0,00	0,00	0,00	1,00	0,30	1,20	2,50	100%	0,00	
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 7	1,50	0,10	0,50	0,00	0,20	0,10	0,10	0,60	1,60	1,60	107%	-0,10
Total	51,00	6,00	13,17	5,00	8,47	3,60	4,15	14,81	55,20	108%	-4,20		

Table 5: IMT Table of Human Resources

1.1.7 GI

Brief description of work

WP 2	
WP 3	Provide exfoliated graphene & transfer 2D material to arbitrary substrates or over Apertures
WP 4	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 2,00 person-months

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	Period 7	Total			
GI	WP 1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 3	19,00	1,50	2,50	1,50	2,00	1,50	2,00	0,00	11,00	58%	8,00	
	WP 4	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,50	1,50	150%	-0,50	
	WP 5	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	1,00	
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00	
	WP 7	0,00	0,50	0,50	0,50	0,00	0,50	0,00	0,50	2,50	0%	-2,50	
	Total	21,00	2,00	3,00	2,00	2,00	2,00	2,00	2,00	15,00	71%	6,00	

Table 6: GI Table of Human Resources
1.1.8 TAS
Brief description of work

WP 2	Provide antenna parameters and help at graphene antenna design Provide graphene parameters and design test devices to find graphene properties to be used in the design
WP 3	
WP 4	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 0,0 person-months

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	Period 7	Total		
TAS	WP 1	2,00	0,00	0,08	0,10	0,00	0,00	0,00	0,00	0,18	9%	1,82
	WP 2	1,00	0,00	0,00	0,00	0,84	0,00	0,00	0,00	0,84	84%	0,16
	WP 3	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 5	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	2,00
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 7	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	2,00
	Total	7,00	0,00	0,08	0,10	0,84	0,00	0,00	0,00	1,02	15%	5,98

Table 7: TAS Table of Human Resources
1.1.9 SHT
Brief description of work

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 4	Contribution for the characterization of the CNT interconnect
WP 6	
WP 7	

Major Cost Items

- Personal costs : 14 person-months

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	Period 7	Total			
SHT	WP 1	1,00	0,60	0,40	0,00	0,00	0,00	0,00	0,00	0,00	1,00	100%	0,00
	WP 2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 3	29,00	3,50	7,80	6,70	7,00	0,00	0,00	0,00	9,70	25,00	86%	4,00
	WP 4	4,00	0,00	0,00	0,70	1,00	0,00	0,00	0,00	3,00	1,70	43%	2,30
	WP 5	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 6	0,00	0,30	0,20	0,40	0,30	0,00	0,00	0,00	0,00	1,20	0%	-1,20
	WP 7	4,00	0,30	0,20	0,40	0,30	0,00	0,00	0,00	1,30	1,20	30%	2,80
	Total	38,00	4,70	8,60	8,20	8,60	0,00	0,00	14,00	30,10	79%	7,90	

Table 8: SHT Table of Human Resources

1.1.10 UNIVPM

Brief description of work

WP 2	Multiphysics simulation of CNT transistor Multiphysics design of CNT NEMS switch Design the graphene detector
WP 3	
WP 4	Contribution for the CNT/graphene antenna characterization
WP 6	
WP 7	

Major Cost Items

- Personal costs : 13.5 person-months

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	Period 7	Total			
UNIVPM	WP 1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	24,00	2,00	4,00	8,00	6,00	7,50	5,00	6,50	32,50	135%	-8,50	
	WP 3	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 4	10,00	0,00	0,00	3,00	3,00	1,00	4,00	4,00	11,00	110%	-1,00	
	WP 5	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 6	5,00	0,50	0,50	0,50	2,00	2,00	0,00	3,00	5,50	110%	-0,50	
	WP 7	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,00	1,00	0%	-1,00	
	Total	39,00	2,50	4,50	11,50	12,00	10,50	9,00	13,50	50,00	128%	-11,00	

Table 9: UNIVPM Table of Human Resources

1.1.11 LiU

Brief description of work

WP 2	Provide physical properties of graphene on SiC wafer and help at graphene antenna design Will help to the design to all graphene devices to comply the graphene on wafer characteristics
WP 3	Graphene growth by high temperature decomposition of SiC
WP 4	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 2.0 person-months

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	Period 7	Total			
LiU	WP 1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	2,00
	WP 3	20,00	1,00	5,50	6,00	6,00	3,00	0,00	2,00	23,50	118%	-3,50	
	WP 4	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	1,00	
	WP 5	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	1,00	
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00	
	WP 7	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00	
	Total	24,00	1,00	5,50	6,00	6,00	3,00	0,00	2,00	23,50	98%	0,50	

Table 10: 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 4	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 4 person-months

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	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	1,00	0,00	1,00	0,00	0,00	0,00	0,00	0,00	1,00	100%	0,00
	WP 3	18,00	0,00	2,41	11,98	4,00	9,25	3,00		30,64	170%	-12,64
	WP 4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 5	10,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	10%	9,00
	WP 6	1,50	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	1,50
	WP 7	1,00	0,27	0,27	0,26	0,28	0,00	0,00		1,08	108%	-0,08
Total	31,50	0,27	3,68	12,24	4,28	9,25	4,00		33,72	107%	-2,22	

Table 11: ICN Table of Human Resources

1.1.13 Tyndall

Brief description of work

WP 2	
WP 3	High k oxide and dielectric technology implementation
WP 4	
WP 6	
WP 7	

Major Cost Items

- Personal costs : 11.50 person-months

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	Period 7			Total
Tyndall	WP 1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 3	23,50	4,50	2,88	4,50	5,00	5,00	5,00	3,50	30,38	129%	-6,88
	WP 4	3,00	0,00	2,00	1,00	0,00	0,00	0,00	1,00	4,00	133%	-1,00
	WP 5	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	2,00	0%	-2,00
	WP 6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0%	0,00
	WP 7	2,50	0,00	1,00	0,50	1,00	1,00	1,00	5,00	9,50	380%	-7,00
Total	29,00	4,50	5,88	6,00	6,00	6,00	6,00	11,50	45,88	158%	-16,88	

Table 12: Tyndall Table of Human Resources

1.2 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	Period 7			Total
TRT	94,00	4,77	8,98	17,61	32,85	7,00	14,00	18,33	103,54	110,15%	-9,54
CHALMERS	70,00	3,50	9,80	6,10	8,00	13,15	0,00	0,00	40,55	57,93%	29,45
FORTH	93,00	7,90	16,83	7,02	9,76	12,25	11,50	44,44	109,70	117,96%	-16,70
LAAS	35,00	5,66	6,22	6,96	7,19	4,34	2,95	6,42	39,74	113,54%	-4,74
UPMC	39,00	2,60	3,07	1,50	0,80	0,00	0,00	10,50	18,47	47,36%	20,53
IMT	51,00	6,00	13,17	5,00	8,47	3,60	4,15	14,81	55,20	108,24%	-4,20
GI	21,00	2,00	3,00	2,00	2,00	2,00	2,00	2,00	15,00	71,43%	6,00
TSA	7,00	0,00	0,08	0,10	0,84	0,00	0,00	0,00	1,02	14,57%	5,98
SHT	38,00	4,70	8,60	8,20	8,60	0,00	0,00	14,00	44,10	116,05%	-6,10
UNIVPM	39,00	2,50	4,50	11,50	12,00	10,50	9,00	13,50	63,50	162,82%	-24,50
LIU	25,00	1,00	5,50	6,00	6,00	3,00	0,00	2,00	23,50	94,00%	1,50
ICN	31,50	0,27	4,68	12,24	4,28	9,25	4,00	0,00	34,72	110,22%	-3,22
Tyndall	29,00	4,50	5,88	6,00	6,00	6,00	6,00	11,50	45,88	158,21%	-16,88
Total	572,50	45,40	90,31	90,23	106,79	71,09	53,60	137,50	594,92	103,92%	-22,42

Table 13 : Overview of planned and actual human resources per partner

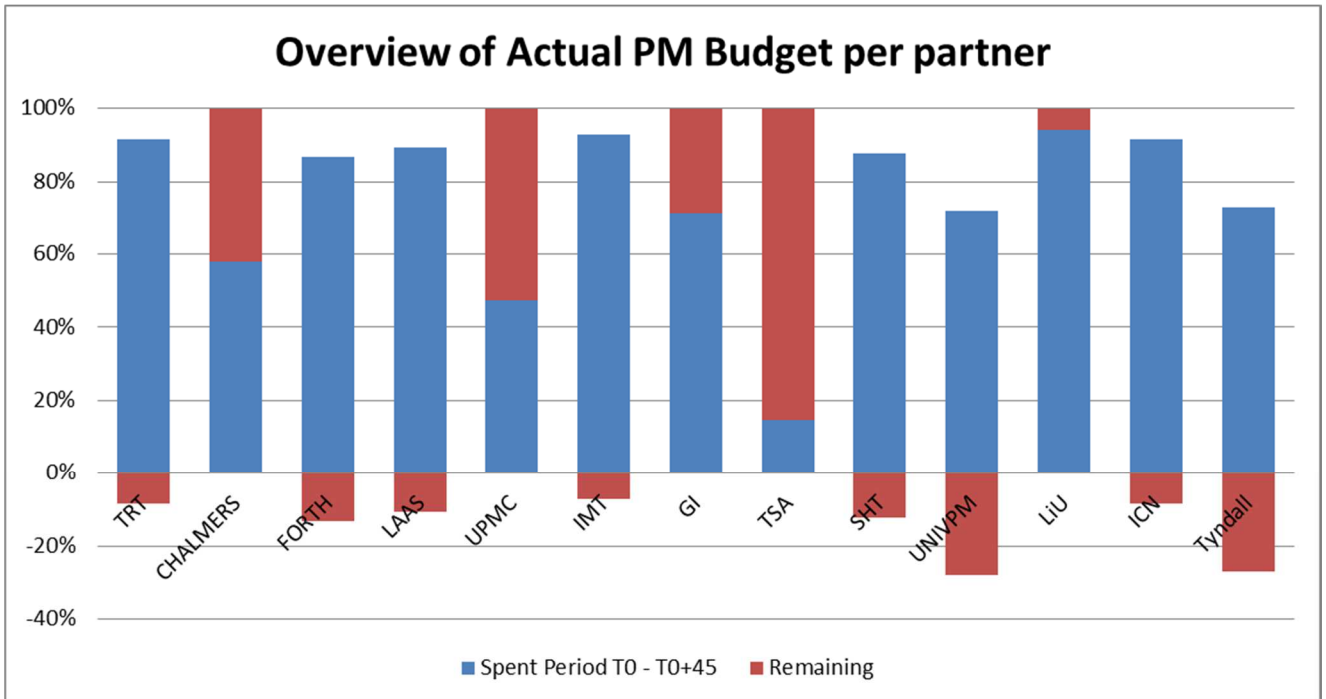


Figure 1 : Actual spent PM vs total budgeted PM for each partner

Partner	Planned PM	Actual Person-Months								% Total	Remaining PM
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Total		
WP1	22,00	10,26	2,98	0,10	0,00	0,00	0,00	0,00	13,34	60,64%	8,66
WP2	87,00	12,00	20,58	14,90	12,71	8,03	5,30	8,66	82,18	94,46%	4,82
WP3	267,50	18,40	58,58	62,05	68,97	44,60	21,40	66,45	340,45	127,27%	-72,95
WP4	98,00	0,00	2,00	8,86	10,12	7,95	19,64	32,68	81,25	82,91%	16,75
WP5	43,50	0,00	0,00	0,00	0,00	1,00	2,13	13,45	16,58	38,11%	26,92
WP6	9,50	1,11	1,30	1,40	6,20	3,12	0,12	5,27	18,52	194,95%	-9,02
WP7	44,00	1,63	4,87	2,92	8,79	6,39	5,01	10,99	40,60	92,27%	3,40
Total	572,50	45,40	90,31	90,23	106,79	71,09	53,60	137,50	594,92	103,92%	-22,42

Table 14 : overview of planned and actual human resources per Workpackage

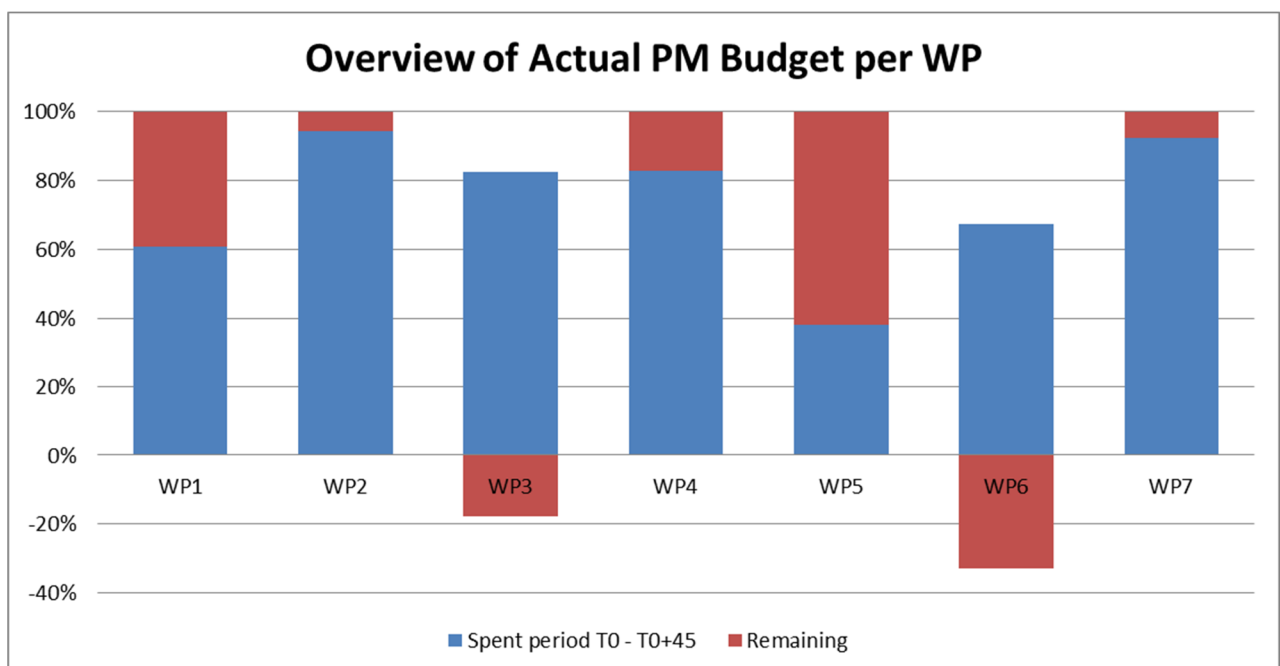


Figure 2 : Actual spent PM vs total budgeted PM for each workpackage

1.3 MAJOR DEVIATIONS

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	Period 7	Total		
PM	577,00	45,42	90,31	90,23	106,79	71,09	53,60	141,50	598,94	103,80%	-21,94

Table 15 : Summary of planned and actual costs and PM expenses

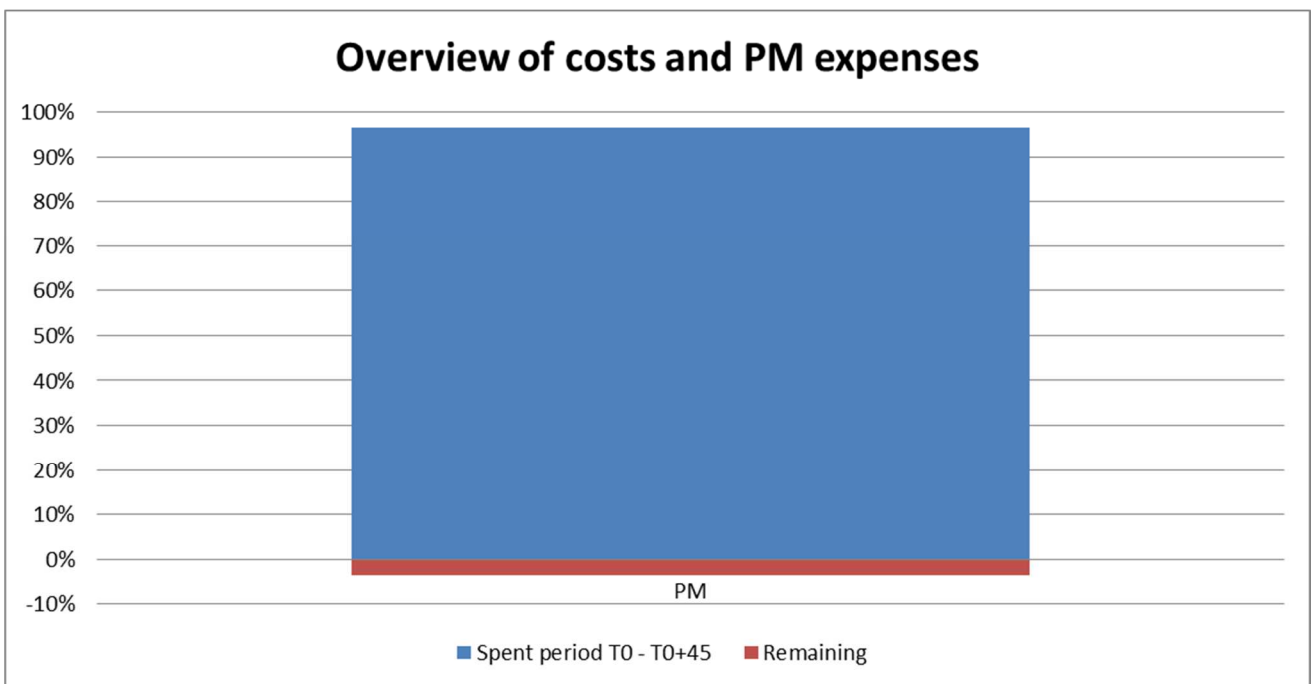


Figure 3 : Overview of PM expenses