



510996

TYPES

Types for Proofs and Programs

Coordination Action
FP6-2002-IST-C

Periodic management report no 2
revised version

Period covered: Sept 1, 2005 – July 31, 2006

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Summary

The aim of the research in the Types consortium is to develop the technology of formal reasoning and computer programming based on Type Theory. This is done by improving the languages and computerised tools for reasoning, and by applying the technology in several domains such as analysis of programming languages, certified software, formalisation of mathematics and mathematics education.

The funding for the Types project goes to coordination of and communications between research groups. The research itself is funded by other sources. The Types consortium receives funding for three annual meetings to communicate recent work throughout, six smaller thematic workshops on designated research themes, one summer school, short courses and short visits between sites.

The consortium consists of 35 research groups from universities and industries in Europe. It would have been unfeasible to let each of these groups be full participants in the action. In order to manage this, we have created a two-level hierarchy with 15 main sites (the contractors of the project) and 21 subsites (subcontractors). The following are the main sites (contractors): Chalmers, CNRS – Paris 7, INRIA-Futurs, INRIA-Sophia, Paris – Sud, Munich – LMU, Munich – TU, Nijmegen, Bialystok, Royal Holloway, Edinburgh, Manchester, Torino, Udine, Warsaw, Tallinn. The small sites (subcontractors) are: Bergen, Helsinki, Stockholm/Uppsala, Minho, Padova, Bologna, Dassault-Aviation, Grenoble, France Telecom, Kent, Novi Sad, Krakow, Savoie, Swansea, Toulouse, Birmingham, Nottingham and Sheffield.

1 Activity

During the year we organized the annual Types conference with more than 100 participants (16 persons coming from outside the Types consortium). We also organized 4 small workshops (with around 25 participants each). There were more than 80 individual visits between the sites. A more detailed description of this is found in the periodic activity report no 2.

We have been asked to give a distribution of the different activities between the sites. This is summarized in the table on page 3. Such a table can only be a crude estimate, and – as is always the case with numbers – says very little about the true effort and quality in the activity.

We have reached the numbers in the column for person-months in the following way: An estimate of the “activity” involved in the Types meeting is in average 3 weeks for each person. This includes 5 weeks for a speaker and one week for a normal participant. To organize a small conference is estimated to take 4 weeks, to organize the Types meeting 10 weeks, to host a talk three weeks, and to give a talk three weeks of work. The last column (Planned) is taken from page 37 in Annex I of the project proposal, it is obtained by taking one third of the figures for total activities (excluding management activities).

Table 1: Summary of activities in the Types project

Site	Subsite	Types meet- ing	Org of meet- ings	talks given	talks hosted	Person- months	Planned
Chalmers		8		3	4	29	14
	Bergen	1		4	2		
	Helsinki	0		1	2		
	Oslo				2		
	Stockholm	2		1	9		
CNRS/Paris 7		2		2	5	8	11
	Savoie	2					
INRIA-Futurs		13		1	1	22	24
	INRIA-Sophia	2		6	1		
	Bologna	2					
	Dassault- Aviation	0					
	Minho	2			1		
Paris Sud		3		2	4	8	14
	Grenoble	2					
	France Tele- com	0					
LMU Munich		3		11	1	11	8
TU Munich		3		1	1	6	11
	Bamberg	1			2		
Nijmegen		7	1	6	7	16	9
Bialystok		3		1		3	8
Royal Holloway		2		2	5	48	22
	Birmingham	2		5			
	Kent	1					
	Nottingham	4	5	5	9		
	Sheffield	3		8	2		
	Toulouse	3	1	3	2		
Edinburgh		6		3		7	9
Manchester		1		4	3	17	11
	Swansea	3		3	9		
Torino		1		2		6	11
	Novi Sad	1		2	2		
Udine		3		1	1	6	11
	Padova	1		1	1		
Warsaw		4			2	7	11
	Krakow	1		2			
IoC Tallinn		2	2	1	3	7	3
External sites		16					
Total		110		81	81	201	177

2 Form C Financial statement per activity for the contractual reporting period

A summary of the Form C is found on page 5

3 Summary financial report

In average the sites have only spent around 70 % of the allocated money. This is partly due to a backlog: it takes up to 6 months for some sites to process the expenses. But this backlog does not explain the difference in expenses. The crude estimates of “activities” gives also a hint that some sites are much more active.

We are currently renegotiating the money allocated to the different sites, so that the allocation better represents the activity of the various groups. Some of this reallocation will go to the new summer school.

4 Justification of major cost items and resources

The character of the Types project (only supporting trips and lectures) is to have no major cost items.

Table 2: Cost Budget Follow-up, Sept 1, 2004 - Aug 31, 2006

Site	Expenses	Budget		Actual cost				Spent %		Remaining
		Year 1	Year 2	1 + 2	Year 1	Year 2	1 + 2	Year 1	1 + 2	
Chalmers	Mngmt.	43 667	9 667	53 334	2 979	4 739	7 718			
	Coord.	22 667	18 917	41 584	14 338	57 864	72 202			
	total	79 600	34 301	113 901	20 780	75 123	95 903	26%	84%	17 997
Paris 7	Coord.	9 100	9 100	18 200	4 395	7 745	12 141			
	total	10 920	10 920	21 840	5 274	9 295	14 569	48%	67%	7 271
INRIA	Coord.	21 233	21 233	42 467	4 440	16 592	21 032			
	total	25 480	25 480	50 960	5 328	19 910	25 238	21%	50%	25 722
Paris Sud	Coord.	12 133	12 133	24 267	7 341	5 084	12 425			
	total	14 560	14 560	29 120	8 809	6 101	14 910	61%	51%	14 210
LMU München	Coord.	6 067	6 067	12 133	1 166	1 848	3 014			
	total	7 280	7 280	14 560	1 399	2 217	3 616	19%	25%	10 944
TU München	Coord.	9 100	9 100	18 200	3 937	4 311	8 247			
	total	10 920	10 920	21 840	4 724	5 173	9 897	43%	45%	11 943
Nijmegen	Coord.	6 067	6 067	12 133	8 445	11 435	19 880			
	total	7 280	7 280	14 560	10 134	13 722	23 856	139%	164%	-9 296
Bialystok	Coord.	6 067	6 067	12 133	6 842	4 065	10 907			
	total	7 280	7 280	14 560	8 210	4 878	13 088	113%	90%	1 472
Royal Holloway	Coord.	21 233	21 233	42 467	12 329	16 562	28 891			
	total	25 480	25 480	50 960	14 795	19 875	34 670	58%	68%	16 290
Edinburgh	Coord.	6 067	6 067	12 133	4 660	6 923	11 583			
	total	7 280	7 280	14 560	5 592	8 308	13 900	77%	95%	660
Manchester	Coord.	9 100	9 100	18 200	4 047	6 680	10 726			
	total	10 920	10 920	21 840	4 856	8 015	12 871	44%	59%	8 969
Torino	Coord.	9 100	9 100	18 200	5 349	5 376	10 725			
	total	10 920	10 920	21 840	6 419	6 451	12 870	59%	59%	8 970
Udine	Coord.	9 100	9 100	18 200	7 719	6 053	13 773			
	total	10 920	10 920	21 840	9 263	7 264	16 527	85%	76%	5 313
Warsaw	Coord.	9 100	9 100	18 200	-	8 754	8 754			
	total	10 920	10 920	21 840	-	10 505	10 505	0%	48%	11 335
IoC Tallinn	Coord.	5 088	5 088	10 177	3 991	2 269	6 259			
	total	6 106	6 106	12 212	4 789	2 722	7 511	78%	62%	4 701
Total		245 866	200 567	446 433	110 373	188 230	298 603	45%	69%	136 502

The total costs includes 20 % indirect costs.