



ROBotic Open-architecture Technology for
Cognition, Understanding and Behavior



Project no. IST-004370

RobotCub

Development of the iCub Cognitive Humanoid Robot

Instrument: Integrated Project
Thematic Priority: IST – Cognitive Systems

Third Periodic Management Report

Months 25-36

Period covered from **01/09/2006** to **31/8/2007**

Date of preparation: **9/10/2007**

Start date of project: **01/09/2004**

Duration: **60 months**

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Revision: 1.0

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Table of Contents

1	Justification of major cost items and resources	4
1.1	Explanation of any major cost.....	4
1.2	Tabular overview of costs	5
1.3	Tabular view of effort	6
1.4	Summary of major deviation	7
2	Form C Financial statement per Activity	8
3	Summary financial report.....	8

1 Justification of major cost items and resources

1.1 Explanation of any major cost

1.2 Tabular overview of costs

Cost Budget Follow-up Table										
Contract N°: IST-004370		Acronym: RobotCub					Date: 9/10/2007			
PARTI-CIPANTS	TYPE of EXPENDITURE (as defined by participants)	BUDGET f	ACTUAL COSTS (EUR)					Pct. spent Total	Remaining Budget (EUR) f-f1	
			Period 1 a1	Period 2 b1	Period 3 c1	Period 4 d1	Period 5 e1			Total f1
UGDIST	Total Person-month	460.00	68.00	69.00	70.00			207.00	0.45	253.00
	Personnel costs	1574500.00	251583.00	193720.00	144291.39			589594.39	0.37	984905.61
	Competitive calls	1600000.00	0.00	0.00	274264.69			274264.69	0.17	1325735.31
	Other costs ('the rest')	1492858.00	209000.00	280200.86	493661.48			982862.34	0.66	509995.66
	Total Costs	4667358.00	460583.00	473920.86	912217.56	0.00	0.00	1846721.42	0.40	2820636.58
SSSA	Total Person-month	217.00	34.70	44.80	51.00			130.50	0.60	86.50
	Personnel costs	652500.00	101066.00	123142.56	110847.65			335056.21	0.51	317443.79
	Major cost item 'y'	0.00	0.00	0.00	60702.84			60702.84	#DIV/0!	-60702.84
	Other costs ('the rest')	361500.00	46866.00	29446.28				76312.28	0.21	285187.72
	Total Costs	1014000.00	147932.00	152588.84	171550.49	0.00	0.00	472071.33	0.47	541928.67
UNIZH	Total Person-month	94.00	22.40	19.00	26.00			67.40	0.72	26.60
	Personnel costs	388000.00	120537.00	3298.67	79715.00			203550.67	0.52	184449.33
	Major cost item 'y'	0.00	0.00	20997.72	27692.55			48690.27	#DIV/0!	-48690.27
	Other costs ('the rest')	339000.00	19936.00	7010.34	21482.00			48428.34	0.14	290571.66
	Total Costs	727000.00	140473.00	31306.73	128889.55	0.00	0.00	300669.28	0.41	426330.72
UNIUP	Total Person-month	90.00	30.00	21.20				51.20	0.57	38.80
	Personnel costs	409500.00	131468.00	74658.14				206126.14	0.50	203373.86
	Major cost item 'y'	0.00	0.00	0.00				0.00	0.00	0.00
	Other costs ('the rest')	460500.00	74473.00	9407.59				83880.59	0.18	376619.41
	Total Costs	870000.00	205941.00	84065.73	0.00	0.00	0.00	290006.73	0.33	579993.27
UNIFE	Total Person-month	182.00	44.00	71.50	52.00			167.50	0.92	14.50
	Personnel costs	460000.00	133719.00	110049.56	80553.32			324321.88	0.71	135678.12
	obj eye tracker	50000.00	42864.00	33445.94	18110.5			94420.44	1.89	-44420.44
	Other costs ('the rest')	343000.00	21773.00	14449.13	26455.22			62677.35	0.18	280322.65
	Total Costs	853000.00	198356.00	157944.63	125119.04	0.00	0.00	481419.67	0.56	371580.33
UNIHER	Total Person-month	137.00	47.50	44.50	44.00			136.00	0.99	1.00
	Personnel costs	492249.00	163784.00	62081.90	80124.16			305990.06	0.62	186258.94
	Major cost item 'y'	0.00	0.00	0.00	0			0.00	0.00	0.00
	Other costs ('the rest')	238270.00	111938.00	9967.40	22353.47			144258.87	0.61	94011.13
	Total Costs	730519.00	275722.00	72049.30	102477.63	0.00	0.00	450248.93	0.62	280270.07
IST	Total Person-month	118.00	35.00	38.00	32.00			105.00	0.89	13.00
	Personnel costs	530000.00	109124.00	204331.00	230000			543455.00	1.03	-13455.00
	Major cost item 'y'	0.00	0.00	0.00	0			0.00	0.00	0.00
	Other costs ('the rest')	619000.00	138677.00	57324.69	31000			227001.69	0.37	391998.31
	Total Costs	1149000.00	247801.00	261655.69	261000.00	0.00	0.00	770456.69	0.67	378543.31
UNISAL	Total Person-month	155.00	32.50	66.50	53.00			152.00	0.98	3.00
	Personnel costs	647064.00	196000.00	94438.01	75758			366196.01	0.57	280867.99
	Major cost item 'y'	0.00	0.00	0.00	0			0.00	0.00	0.00
	Other costs ('the rest')	291936.00	30000.00	112905.17	61240			204145.17	0.70	87790.83
	Total Costs	939000.00	226000.00	207343.18	136998.00	0.00	0.00	570341.18	0.61	368658.82
EPFL	Total Person-month	144.00	36.00	37.50	41.00			114.50	0.80	29.50
	Personnel costs	594960.00	148740.00	214514.00	60465.59			423719.59	0.71	171240.41
	Major cost item 'y'	0.00	0.00	0.00	0.00			0.00	0.00	0.00
	Other costs ('the rest')	284992.00	29748.00	0.00	0.00			29748.00	0.10	255244.00
	Total Costs	879952.00	178488.00	214514.00	60465.59	0.00	0.00	453467.59	0.52	426484.41
TLR	Total Person-month	43.00	9.50	21.00	18.00			48.50	1.13	-5.50
	Personnel costs	225600.00	54398.00	104253.88	96088.02			254739.90	1.13	-29139.90
	Major cost item 'y'	0.00	0.00	0.00	0.00			0.00	0.00	0.00
	Other costs ('the rest')	162720.00	22634.00	2373.10	6984.86			31991.96	0.20	130728.04
	Total Costs	388320.00	77032.00	106626.98	103072.88	0.00	0.00	286731.86	0.74	101588.14
EBRI	Total Person-month	11.00	0.00	0.00	0.00			0.00	0.00	11.00
	Personnel costs	150000.00	0.00	0.00	0.00			0.00	0.00	150000.00
	Major cost item 'y'	0.00	0.00	0.00	0.00			0.00	0.00	0.00
	Other costs ('the rest')	40000.00	0.00	0.00	0.00			0.00	0.00	40000.00
	Total Costs	190000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	190000.00
TOTAL	Total Person-month	1651.00	359.60	433.00	387.00			1179.60	0.71	471.40
	Personnel costs	6124373.00	1410419.00	1184487.72	957843.13			3552749.85	0.58	2571623.15
	Major cost item 'y'	1650000.00	42864.00	54443.66	380770.58			478078.24	0.29	1171921.76
	Other costs ('the rest')	4633776.00	705045.00	523084.56	663177.03			1891306.59	0.41	2742469.41
	Total Costs	12408149.00	2158328.00	1762015.94	2001790.74	0.00	0.00	5922134.68	0.48	6486014.32

Period 1 adjusted by -38713.37

Period 1 adjusted by -1891.64

1.3 Tabular view of effort

Person-Month Status Table		Partner - Person-month per Workpackage											AC - own staff											
		TOTALS	UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UNIHER	IST	UNISAL	EPFL	TLR	EBRI	AC TOTALS	UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UNIHER	IST	UNISAL	EPFL	TLR
CONTRACT N°: IST-004370																								
ACRONYM: RobotCub																								
PERIOD: Month 25 - Month 36																								
Workpackage 1:	Actual WP total:	9.55	3	0	0.7	0	0.5	0.25	3	1.5	0.6	0	7.3	0	1.45	0.5	1	1.5	0.25	1	1	0.6	0	
Management	Planned WP total:	10.06	4.66	0	0.7	0	0	0.5	2	1.5	0.7	0	7.9	0	1	0	1	1.7	0.5	2	1	0.7	0	
Workpackage 2:	Actual WP total:	19.25	6	0	6	4	0	3.25	0	0.0	0	0	11.2	0	1.25	2.5	4.2	0	3.25	0	0	0	0	
Cognitive Development	Planned WP total:	11.96	4.66	0	3.3	3	0	1	0	0.0	0	0	9.7	0	0.7	1.7	3	3.3	1	0	0	0	0	
Workpackage 3:	Actual WP total:	47.14	2	3.14	5	10	3.5	2.5	6	15.0	0	0	29.8	4	3.09	3	2.7	1	2.5	6	7.5	0	0	
Sensorimotor Coordination	Planned WP total:	57.22	12	2.62	3.3	9	1.3	2	12	15.0	0	0	19.9	0	5.38	1.7	2.3	1	2	0	7.5	0	0	
Workpackage 4:	Actual WP total:	21.25	5	0	2	11	0	3.25	0	0.0	0	0	12	0	0	3	1.2	0.5	3.25	4	0	0	0	
Object's Affordance	Planned WP total:	24.7	9	0	2	10	1	2.7	0	0.0	0	0	8	0	0	0	1.3	0	2.7	4	0	0	0	
Workpackage 5:	Actual WP total:	16.5	0	0	0	3	4	1.5	0	8.0	0	0	24.7	0	8	0	2.2	12	1.5	0	1	0	0	
Imitation Behavior	Planned WP total:	33.27	2	8.67	0.7	3	8.3	2.6	0	8.0	0	0	9.3	0	0	0	1.7	4	2.6	0	1	0	0	
Workpackage 6:	Actual WP total:	21.5	0	0	0	7	14	0.5	0	0.0	0	0	10.7	0	0	0	4.2	4	0.5	0	2	0	0	
Gesture Communication	Planned WP total:	19.4	0	0	0	7	11.7	0.7	0	0.0	0	0	13	0	0	0	4.3	6	0.7	0	2	0	0	
Workpackage 7:	Actual WP total:	63.84	14.5	22.8	0	0	0	3.5	17	0.0	6	0	34.2	12	2.74	0	0	0	3.5	10	0	6	0	
Mechatronics of CUB	Planned WP total:	66.47	15.3	22.7	2	0	0	2	20	0.0	4.5	0	15.9	0	2.66	0.7	0	0	2	6	0	4.5	0	
Workpackage 8:	Actual WP total:	23.49	12	3.74	3	0	0	0.75	0	2.0	2	0	21.8	11	3	0	0	0	0.75	4	1	2	0	
Open System	Planned WP total:	52.21	39	3.71	2.7	0	0	1.3	2	2.0	1.5	0	8.53	0	2.03	0.7	0	0	1.3	2	1	1.5	0	
Workpackage 9:	Actual WP total:	6.9	0.5	1	0.4	0	1.5	0.5	1	1.5	0.5	0	6	0	1	0	1	1.5	0.5	1	0.5	0.5	0	
Community Building	Planned WP total:	11.46	5.3	1.66	0.1	0	1	0.5	1	1.5	0.4	0	7.06	0	1.66	0	1	2	0.5	1	0.5	0.4	0	
Total Project Person-month	Actual total:	229.4	43	30.7	17.1	0	35	23.5	16	27	28	9.1	158	27	20.5	9	0	16.5	20.5	16	26	13	9.1	0
	Planned total:	286.8	91.9	39.3	14.8	0	32	23.3	13.3	37	28	7.1	99.2	0	13.4	4.8	0	14.6	18	13.3	15	13	7.1	0

1.4 Summary of major deviation

The University of Hertfordshire slightly overspent in project year 3 due to the fact that the research assistant who left in Spring 2006 had to be replaced by a postdoc. However, this overspending is compensated for by the underspending of UNIHER in year 2. Also, from the second half of year 4 onwards, until the end of the project, staff costs charged to the project will only include one researcher. Thus, overall there will not be any impact on the overall budget allocated to UNIHER.

The mechanical design of the platform charged on Telerobot is higher than the initial forecast. Effort forecasted for Y3 will be consequently higher than initially planned. The number of peoples in the effort table and their individual effort has changed from the initial forecast. Test and integration time of the first prototypes is longer than expected.

There was an increase of the number of person-months working in the project at IST, mainly resulting from the extra effort involved in the redesign of the iCub face and facial expressions. Also, some of the work in software development and integration require more effort than initially planned for.

2 Form C Financial statement per Activity

Individual Form Cs for each contractor are appended to this document.

3 Summary financial report

A Summary of Form Cs is appended to this document.