



ROBotic Open-architecture Technology for
Cognition, Understanding and Behavior



Project no. 004370

RobotCub

Development of a cognitive humanoid cub

Instrument: Integrated Project
Thematic Priority: IST – Cognitive Systems

First Periodic Management Report

Period covered from **01/09/2004** to **31/8/2005**

Date of preparation: **3/10/2005**

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

Duration: **60 months**

Project coordinator names: **Giulio Sandini, David Vernon, Giorgio Metta**

Project coordinator organisation name: **University of Genova
DIST – LIRA-Lab**

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1 Justification of major cost items and resources

1.1 Actual Cost Report

1.1.1 Budgeted Costs

The distribution of budget for the five years as reported in the Technical Annex is the following:

Name	No.	Y1	Y2	Y3	Y4	Y5	TOTAL Cost	TOTAL Funding
UGDIST	1	380,900	417,528	1,159,260	1,648,060	408,060	4,013,808	4,013,808
SSSA	2	162,000	142,000	147,700	169,300	108,000	729,000	729,000
UNIZH	3	71,000	67,000	67,000	67,000	67,000	339,000	339,000
UNIUP	4	84,800	83,800	83,800	83,800	83,800	420,000	420,000
UNIFE	5	154,000	95,000	90,000	54,000	50,000	443,000	443,000
UNIHER	6	98,320	93,142	86,606	86,606	86,606	451,280	451,280
IST	7	250,000	250,000	210,000	210,000	229,000	1,149,000	594,000
UNISAL	8	138,324	148,618	147,588	100,496	103,974	639,000	639,000
EPFL	9	107,990	107,990	107,992	107,990	107,990	539,952	539,952
TLR	10	78,408	78,432	80,016	71,880	79,584	388,320	240,960
EBRI	11	24,000	24,000	22,000	20,000	0	90,000	90,000
TOTAL		1,549,742	1,507,510	2,201,962	2,619,132	1,324,014	9,202,360	8,500,000

Note that IST adopts a "Full Cost" and TLR adopt a "Full Cost Flat Rate" model of cost while all other partners are "Additional Cost".



In the following table, the summary of the first reporting period is presented. Overall the project is under spending approximately € 230,000 (15%). This figure results from a major under-spending of UNISAL and under spending of SSSA, UNIFE and EBRI and an increase in costs of UNIUP. Management cost is less than 7% of total eligible costs.

1.1.2 Actual costs claimed

Budget Summary Month 12

	Eligible Costs	Requested Contribution	Management
UGDIST	372,653.25	372,653.25	68,651.06
SSSA	95,378.01	95,378.01	372.17
UNIZH	72,035.69	72,035.69	
UNIUP	117,560.25	117,560.25	
UNIFE	120,536.23	120,536.23	
UH	98,384.34	98,384.34	4,393.99
IST	247,800.33	124,220.17	640.00
UNISAL	19,968.68	19,968.68	
EPFL	98,779.60	98,779.60	
TLR	77,032.01	47,417.68	17,803.35
EBRI	0.00	0.00	
Total	1,320,128.39	1,166,933.90	91,860.57

Budgeted Cost	Difference	
380,900	-8,247	-2.17%
162,000	-66,622	-41.12%
71,000	1,036	1.46%
84,800	32,760	38.63%
154,000	-33,464	-21.73%
98,320	64	0.07%
250,000	-2,200	-0.88%
138,324	-118,355	-85.56%
107,990	-9,210	-8.53%
78,408	-1,376	-1.75%
24,000	-24,000	-100.00%
1,549,742.00	-229,613.61	-14.82%

AC Cost Model
FC Cost Model
FCF Cost Model

The explanation of the individual deviation is given in the description of individual cost report. It is worth noting here that all changes did not affect the overall objectives of the project but reflect a temporary change in funding strategy of some partners that will be restored in the next financial period.

It is the intention of the consortium, however, to re-evaluate the subdivision of budget submitted originally in the Technical annex at the light of the results obtained and a better understanding of the iCub design.



1.2 Costs of individual partners

1.2.1 University of Genova

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	244666.83				10000.00		68651.06					323317.89	0.00
Of which subcontracting	7790.00				0.00		4981.24					12771.24	0.00
Indirect costs	47335.36				2000.00							49335.36	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	292002.19	0.00	0.00	0.00	12000.00	0.00	68651.06	0.00	0.00	0.00	0.00	372653.25	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by UGDIST.

The cost of subcontracting on the R&D cost (column A) refers the cost of design of part of the electronics to a company specialized in the design and miniaturization of digital and analog electronic boards. The need of this subcontract is explained in the Technical Annex (see page 103). UGDIST is expected to spend about € 50,000 in subcontracts for the first 18 months.

The cost of subcontracting on the Management (column D), refers to the cost of the Audit Certificate.

Cost for training refers to the fellowships provided by the Consortium to young researchers attending a multidisciplinary school organized by members of the consortium on the topic of cognitive development in humans and artificial systems.

UGDIST has presented a certified financial statement for this period



1.2.2 Scuola Superiore S. Anna

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	79171.54						343.99					79515.53	0.00
Of which subcontracting							135.00					135.00	0.00
Indirect costs	15834.30						28.18					15862.48	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	95005.84	0.00	0.00	0.00	0.00	0.00	372.17	0.00	0.00	0.00	0.00	95378.01	0.00

Note: This table is extracted from FORM-C

With respect to the budgeted costs, SSSA is under spending about € 67,000 because of a smaller effort during the first 12 months. This is going to be partially compensated in the second year of the project starting from the first 6 months of the second year during which a considerable effort is expected for mechanical design and test.



1.2.3 University of Zurich

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	60029.74											60029.74	0.00
Of which subcontracting												0.00	0.00
Indirect costs	12005.95											12005.95	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	72035.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72035.69	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by UNIZH.

UNIZH has presented a certified financial statement for this period



1.2.4 University of Uppsala

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	97966.88											97966.88	0.00
Of which subcontracting												0.00	0.00
Indirect costs	19593.37											19593.37	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	117560.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	117560.25	0.00

Note: This table is extracted from FORM-C

With respect to the budgeted costs, UNIUP is over-spending about €30,000 because of an increase in effort.

UNIUP has presented a certified financial statement for this period



1.2.5 University of Ferrara

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	99355.86				2591.00							101946.86	0.00
Of which subcontracting	9000.00											9000.00	0.00
Indirect costs	18071.17				518.20							18589.37	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	117427.03	0.00	0.00	0.00	3109.20	0.00	0.00	0.00	0.00	0.00	0.00	120536.23	0.00

Note: This table is extracted from FORM-C

With respect to the budgeted costs, UNIFE is under-spending about € 37,000 because it was decided to increase the initial contribution based on “own resources” while focusing UNIFE contribution to the project and hiring a person with the most adequate background to dedicate to the project.

The cost of subcontracts is related to the precision mechanics and electronic engineering design and fabrication for the experimental set-ups required to carry out the research activity (see page 107 of the Technical Annex).



1.2.6 University of Hertfordshire

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	75879.31				2445.99		4393.99					82719.29	0.00
Of which subcontracting												0.00	0.00
Indirect costs	15175.86				489.19							15665.05	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	91055.17	0.00	0.00	0.00	2935.18	0.00	4393.99	0.00	0.00	0.00	0.00	98384.34	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by UNIHHER.



1.2.7 Instituto Superiore Tecnico¹

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	142160.33						640.00					142800.33	0.00
Of which subcontracting							640.00					640.00	0.00
Indirect costs	105000.00											105000.00	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	247160.33	0.00	0.00	0.00	0.00	0.00	640.00	0.00	0.00	0.00	0.00	247800.33	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by IST.

IST is requesting a financial contribution of € 124,220.17.

IST has presented a certified financial statement for this period

¹ IST is a "Full Cost" partner.



1.2.8 University of Salford

	Type of Activity											
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)	
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)
Direct costs	16640.57										16640.57	0.00
Of which subcontracting											0.00	0.00
Indirect costs	3328.11										3328.11	0.00
Adjustments to previous period(s)											0.00	0.00
Total costs	19968.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19968.68	0.00

Note: This table is extracted from FORM-C

All the contracted work has been completed however UNISAL costs are considerably lower than expected because during the first 12 months UNISAL have been able to draw on internal resources at a particularly high level. Over the course of the project this will equalise itself to the expected level so UNISAL expenditure will come in line with projections.



1.2.9 Ecole Polytechnique Federale de Lausanne

	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)	
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)
Direct costs	79543.00				2774.00						82317.00	0.00
Of which subcontracting											0.00	0.00
Indirect costs	15908.60				554.00						16462.60	0.00
Adjustments to previous period(s)											0.00	0.00
Total costs	95451.60	0.00	0.00	0.00	3328.00	0.00	0.00	0.00	0.00	0.00	98779.60	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by EPFL.



1.2.10 Telerobot S.r.l

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs	49357.22						15041.56					64398.78	0.00
Of which subcontracting												0.00	0.00
Indirect costs	9871.44						2761.79					12633.23	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	59228.66	0.00	0.00	0.00	0.00	0.00	17803.35	0.00	0.00	0.00		77032.01	0.00

Note: This table is extracted from FORM-C

There is no significant difference between the budgeted costs and the costs claimed by TRL.

It is worth noting that for the calculation of costs there was an uncertainty about the definition of a part of the effort costs as “subcontracts”. This matter is still to be fully clarified and will be done before the presentation of the next cost statement. In case of differences, they will be adjusted at the end of the next reporting period.

TLR is requesting a contribution of €47,417.68



1.2.11 European Brain Research Institute

	Type of Activity												
	Research and Technological Development / Innovation (A)		Demonstration (B)		Training (C)		Management of the Consortium (D)		Other Specific Activities (E)		Total (F) = (A)+(B)+(C)+(D)+(E)		
	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	Contractor	Third Party(ies)	
Direct costs												0.00	0.00
Of which subcontracting												0.00	0.00
Indirect costs												0.00	0.00
Adjustments to previous period(s)												0.00	0.00
Total costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: This table is extracted from FORM-C

As explained in the “effort” section, in this initial part of the project EBRI’s participation has been mostly through meetings between the coordinator and Prof. Bizzi to discuss the overall experimental plan of the project. The participation of EBRI to the project’s activities during the first year of the project has been much smaller than planned because of Prof. Bizzi’s unforeseen engagements at MIT.

It is expected that EBRI participation will become more active and continuous during the second year because of the full-time presence of Prof. Bizzi at EBRI in Rome



1.3 Effort Report

The effort reported here has two components: 1. "Charged to projects" refers to the effort provided by persons whose salary is charged to the RobotCub budget while "Own resources" refers to persons whose salary is charged to other sources (e.g. in case of the salary full time University's personnel).

It is worth noting that the effort planned in the technical annex refers to a period of 18 months while the effort reported here refers to the first 12 months of the project.



1.3.3 Effort spend in the first 12 months

Effort Table (12 months)	UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UH	IST	UNISAL	EPFL	TLR	EBRI	Total
WP1: Management	7	0.5	1		1.5	1.7	1	1	1.5	2.96		18.16
WP2: Development (Agency Formation)	9	1.5	6.2	8	5	0.7	2					32.4
WP3: Sensorimotor Coordination	13	3	6.1	14	15		6	7.5	3			67.6
WP4: Object's Affordance	8		3.8	7	8	0.8	4.4	3				35
WP5: Imitation	2	5.2	0.5		6.5	5	5.6		14			38.8
WP6: Gesture Communication					7	38.3			4			49.3
WP7: Mechatronics	11	21.5	2.5				12	18	9	6.1		80.1
WP8: Open System (CUB)	10	2.5	1.3				3	2	2.5	3.34		24.64
WP9 Community Building	8	0.5	1	1	1	1	1	1	2	1.2		17.7
TOTAL EFFORT	68	34.7	22.4	30	44	47.5	35	32.5	36	13.6		363.7

The table below reports the subdivision between “charged to project” and “own contribution”.

Contributed vs charged effort (month 12)	UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UH	IST	UNISAL	EPFL	TLR	EBRI	Total
Effort charged to project	37	18.2	10.9	24	22.5	21	17.5	12	30	6.8		199.9
Effort contributed by own resources	31	16.5	11.5	6	21.5	26.5	17.5	20.5	6	6.8		163.8
Total Effort	68	34.7	22.4	30	44	47.5	35	32.5	36	13.6		363.7

Percentage Own Effort	45.6%	47.6%	51.3%	20.0%	48.9%	55.8%	50.0%	63.1%	16.7%	50.0%		45.0%
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Considering that in the next 6 months of the project we do not expect significant change in the ongoing effort, the projected effort of the first 18 months is the following.

Budgetd vs Projected Effort at 18 months	UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UH	IST	UNISAL	EPFL	TLR	EBRI	Total
Budgeted Effort (from Annex 1)	100	70.6	31	27	51	54.5	40	51	42	12.3	6	485.4
Projected Effort (computed from month 12)	102	52.05	33.6	45	66	71.25	52.5	48.75	54	20.4		545.55
Percentage Difference	2.00%	-26.27%	8.39%	66.67%	29.41%	30.73%	31.25%	-4.41%	28.57%	65.85%	-100.00%	12.39%

The total projected budget of the project is not significantly different from the budgeted effort. However there are significant differences in the effort of some partners which will be explained in the sections devoted to the individual partners



First Management Report

1.3.4 Persons involved during the first 12 months.

RobotCub Researchers

CHARGED RESOURCES										
UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UH	IST	UNISAL	EPFL	TLR	EBRI
Giorgio Metta	Giovanni Cappiello	Martin Kraft	Kerstin Rosander	Andrey Oleyinik	N. Assif Mirza	Ricardo Beira	Martin Sinclair	Micha Hersch	David Corsini	
David Vernon	Giovanni Stellan	A. Hernandez Arieta	Helena Grönqvist	Brian Toomey	Andrew Appleby	Miguel Praça	Milan Bezedick	Ludovic Righetti	Francesco Becchi	
Lorenzo Natale	Claudia Salatino		Helena Uhlig	Luciano Pusinanti	Michael Blow	J. Santos-Victor	Yannis Sarakaglou	Andre Maurer	Giulio Maggiolo	
Matteo Brunettini	Franco Zaccone		Malin Adell	Livio Finos		A. Bernardino			Fabio Repetto	
Michele Tavella	Irene Sardellitti					J. Gaspar			Gabriele Tabbita	
	Christian Cipriani					J. Sentieiro			Paolo Maurel	
						M.I.Ribeiro			Mauro Levaro	

OWN RESOURCES										
UGDIST	SSSA	UNIZH	UNIUP	UNIFE	UH	IST	UNISAL	EPFL	TLR	EBRI
Giulio Sandini	Paolo Dario	Rolf Pfeifer	Claes von Hofsten	Luciano Fadiga	Lars Olsson	Ricardo Beira	Darwin Caldwell	Biljana Petreska	David Corsini	
Vincenzo Tagliasco	Chiara Carrozza	Peter Eggenberger		Laila Craighero	Ben Robins	Miguel Praça	John Gray		Francesco Becchi	
Francesco Orabona	Cecilia Laschi	Gabriel Gomez		Claudio Bonifazzi	Dorothee Francois	J. Santos-Victor	Nickoloas Tsagaraki	Aude Billard	Giulio Maggiolo	
Matteo Brunettini	Carlo Filippeschi			Patrik Fazio	Kerstin Dautenhahn	A. Bernardino	Cyd Hockenhu	Auke Ijspeert	Fabio Repetto	
	Roberto Lazzarini			Alice Roy	Chrystopher L. Neha	J. Gaspar	William Hinojosa		Gabriele Tabbita	
				Benno Gesierich	René te Boekhorst	J. Sentieiro	Rene Masey		Paolo Maurel	
				Livio Finos	David C. Lee	M. I. Ribeiro			Mauro Levaro	
				Rosario Canto						



1.4 Effort of individual partners

1.4.1 University of Genova

UGDIST Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Giorgio Metta			2	1			6	3		12
David Vernon	1	2						2		5
Lorenzo Natale		2	4					2		8
Matteo Brunettini								1	1	2
Michele Tavella									3	3
Fabio Berton			3							3
Anna Custo			1							1
Claudio Castellini		1	1	1						3
Actual charged to project	1	5	11	2			6	8	4	37

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Giulio Sandini	4								1	5
Vincenzo Tagliasco	2		2							4
Francesco Orabona		4		6	2					12
Matteo Brunettini							5	2	3	10
Actual own resources	6	4	2	6	2		5	2	4	31

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	7	9	13	8	2		11	10	8	68
Planned 18 months	24	8	12	12	4	4	12	12	12	100
Projected 18 months	10.5	13.5	19.5	12	3		16.5	15	12	102.0

The table on "Total Effort" reports the actual effort spent by UGDIST in each WP compared to the budgeted effort for the first 18 month and the effort projected effort.

UGDIST Deviation from planned activities

No major deviation in the total effort although a redistribution of effort from management to other scientifically related Workpackages is evident. The lower effort spent for management was caused by a change in hiring plans for the management staff.



UGDIST Contract's Amendment Requested

The vice-director of the Department (who is the second legal representative of UGDIST) has changed and is now Prof. Antonio Boccalatte.

Prof. Antonio Boccalatte
DIST – University of Genova
Viale Causa 13
16145 Genova - Italy

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1.4.2 Scuola Superiore S. Anna
SSSA Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Giovanni Cappiello							5.3			5.3
Giovanni Stellan							6.5			6.5
Claudia Salatino							1.7			1.7
Franco Zaccone							3			3
Irene Sardellitti							1.3			1.3
Christian Cipriani							0.4			0.4
Actual charged to project							18.2			18.2

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Paolo Dario	0.5						0.7			1.2
Chiara Carrozza		1.5	0.5		1.6					3.6
Cecilia Laschi			1		1.6			2.5	0.5	5.6
Carlo Filippeschi					1		1.3			2.3
Roberto Lazzarini			1.5		1		1.3			3.8
Actual own resources	0.5	1.5	3		5.2		3.3	2.5	0.5	16.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	0.5	1.5	3		5.2		21.5	2.5	0.5	34.7
Planned 18 months	1.5	4	10		16		28	8.6	2.5	70.6
Projected 18 months	0.75	2.25	4.5		7.8		32.25	3.75	0.75	52.1

SSSA Deviation from planned activities

A reduced effort was charged during the first 12 months mostly because the effort was concentrated specifically on WP7 while comparatively less effort was devoted to the other WPs. This deviation is expected to be partially compensated in the next 12 months.

SSSA Major Equipments

Sony AIBO purchased in order to check crawling strategies.

SSSA Contract's Amendment Requested

SSSA informed the prime contractor that the official contact person for the project is now Prof. Maria Chiara Carrozza who replaces Prof. Paolo Dario. This follows a



decision by the Scuola Superiore S. Anna to assign to Prof. Carrozza as Director of Research Division the responsibility of all research projects.

Furthermore Prof. Paolo Ancilotti replaces Prof. Riccardo Varaldo as director of SSSA and Prof. Enrico Bottani becomes the new vice-director..



1.4.3 University of Zurich

UNIZH Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Martin Kraft	0.7	0.6	0.2	0.3	0.3			1.3		3.4
A. Hernandez Arieta		2.1	2	1.9			1.5			7.5
Actual charged to project	0.7	2.7	2.2	2.2	0.3		1.5	1.3		10.9

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Rolf Pfeifer	0.2	1.5	1.2	0.2	0.2				1	4.3
Peter Eggenberger Hotz	0.1	0.3	0.2	0.4						1
Gabriel Gomez		1.7	2.5	1			1			6.2
Actual own resources	0.3	3.5	3.9	1.6	0.2		1		1	11.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1	6.2	6.1	3.8	0.5		2.5	1.3	1	22.4
Planned 18 months	1.5	10	9	6	3				1.5	31
Projected 18 months	1.5	9.3	9.15	5.7	0.75		3.75	1.95	1.5	33.6

UNIZH Deviation from planned activities

No major deviation from the planned activities.

UNIZH Remark on Effort

From now on Gabriel Gomez will be charged 10% to the RobotCub Project.



1.4.4 University of Uppsala

UNIUP Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Kerstin Rosander		4	6	2						12
Helena Grönqvist			7							7
Helena Uhlig				3						3
Malin Adell				2						2
Actual charged to project		4	13	7						24

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Claes von Hofsten		4	1						1	6
Actual own resources		4	1						1	6

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total		8	14	7					1	30
Planned 18 months	1.5	12	6	6					1.5	27
Projected 18 months		12	21	10.5					1.5	45.0

UNIUP Deviation from planned activities

More effort than planned is being spent in WP3 and WP4 as a result of unforeseen new research activity in the two workpackage in collaboration with UNIFE.

In the first interim report at month 6, Dr Rosander was mistakenly charged for three months only during the first 6 months of the project while the real effort was 6 months.



1.4.5 University of Ferrara

UNIFE Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Andrey Oleyinik			5	4	1					10
Brian Toomey			3							3
Luciano Pusinanti	1.5	0.5	0.5	0.5	0.5	0.5			0.5	4.5
Livio Finos			2		2	1				5
Actual charged to project	1.5	0.5	10.5	4.5	3.5	1.5			0.5	22.5

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Luciano Fadiga		0.5	1.5	0.5	1	0.5			0.5	4.5
Laila Craighero		1	1		1	1				4
Claudio Bonifazzi			1			2				3
Patrik Fazio		0.5								0.5
Alice Roy		0.5								0.5
Benno Gesierich				1	1					2
Livio Finos		1	1	2		2				6
Rosario Canto		0.5								0.5
Fabbri Destro Maddalena		0.5								0.5
Actual own resources		4.5	4.5	3.5	3	5.5			0.5	21.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1.5	5	15	8	6.5	7			1	44
Planned 18 months	1.5	6	12	12	6	12			1.5	51
Projected 18 months	2.25	7.5	22.5	12	9.75	10.5			1.5	66.0

UNIFE Deviation from planned activities

More effort than expected was spent in WP3 and WP5.

UNIFE Major Equipments

UNIFE has purchased an eye tracking device to perform experiments in parallel with UNIUP.



1.4.6 University of Hertfordshire

UNIHER Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
N. Assif Mirza						11				11
Andrew Appleby						5				5
Michael Blow					2	3				5
Actual charged to project					2	19				21

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Lars Olsson						10				10
Ben Robins				0.3		1.7				2
Dorothee Francois		0.2				0.6				0.8
Kerstin Dautenhahn	1.7	0.5		0.5	1.5	1.5			0.5	6.2
Chrystopher L. Nehaniv					1	4			0.5	5.5
René te Boekhorst						1.5				1.5
David C. Lee					0.5					0.5
Actual own resources	1.7	0.7		0.8	3	19.3			1	26.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1.7	0.7		0.8	5	38.3			1	47.5
Planned 18 months	2.5	4		4.5	12	30			1.5	54.5
Projected 18 months	2.55	1.05		1.2	7.5	57.45			1.5	71.3

UNIHER Deviation from Planned Activity

With the decision that the iCub will not speak, this WP is not focusing on acquisition of speech. Instead we have expanded effort into foundational aspects for the ontogenesis of gesture and communication, focusing on pre-cursors for the development of communication and gesture using bottom-up, enactive dynamical systems methods. In addition, in order to help ensure balanced design and adequate expressive capability for interaction in the iCub, we have undertaken design and construction of a minimal expressive robotic head for use in human-robot interaction studies. This is an extension of the UNIHER role in the project (originally only focusing on iCub mindware). This new initiative had been approved by the management team prior to start of work.



During the first year UNIHER spent less PM's on WP4 as projected (0.8 PM compared to 3 PM's estimated for year 1). The experiments performed by UNIHER during the first year did not extensively involve interaction with objects, so the study of affordances specifically was limited. Effort was therefore shifted to other WP's.



1.4.7 Instituto Superiore Tecnico

IST Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Ricardo Beira							4.5			4.5
Miguel Praça							1	1.5	0.5	3
J. Santos-Victor	0.5	0.5					0.5			1.5
A. Bernardino			0.5	0.5	0.5					1.5
J. Gaspar		0.5	1							1.5
J. Sentieiro			1.5		1.3					2.8
M.I.Ribeiro				1.7	1					2.7
Actual charged to project	0.5	1	3	2.2	2.8		6	1.5	0.5	17.5

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Ricardo Beira							4.5			4.5
Miguel Praça							1	1.5	0.5	3
J. Santos-Victor	0.5	0.5					0.5			1.5
A. Bernardino			0.5	0.5	0.5					1.5
J. Gaspar		0.5	1							1.5
J. Sentieiro			1.5		1.3					2.8
M. I. Ribeiro				1.7	1					2.7
Actual own resources	0.5	1	3	2.2	2.8		6	1.5	0.5	17.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1	2	6	4.4	5.6		12	3	1	35
Planned 18 months	1.5	3	8	6	8		8	4	1.5	40
Projected 18 months	1.5	3	9	6.6	8.4		18	4.5	1.5	52.5

IST Remark on Effort

Due to extra work carried out for the iCub face design there has been an increase on the number of person-months allocated to the project with respect to the original plan. Manuel Lopes although not contributing directly in the project attends some of the Robotcub's meetings bringing his ideas and expertise on robot imitation



1.4.8 University of Salford

UNISAL Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Martin Sinclair			1				9			10
Milan Bezedick				1						1
Yannis Sarakaglou			1							1
Actual charged to project			2	1			9			12

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Darwin Caldwell	1						0.5	1	0.5	3
John Gray				0.5				1	0.5	2
Nickoloas Tsagarakis			3				3			6
Cyd Hockenhill			0.5				2			2.5
William Hinojosa			2	1.5			3.5			7
Rene Masey										
Actual own resources	1		5.5	2			9	2	1	20.5

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1		7.5	3			18	2	1	32.5
Planned 18 months	1.5		12	6			24	6	1.5	51
Projected 18 months	1.5		11.25	4.5			27	3	1.5	48.8

No major deviation from planned activities



1.4.9 Ecole Polytechnique Federale de Lausanne

EPFL Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Micha Hersch			2		8	2				12
Ludovic Righetti			1				9	1.5	0.5	12
Andre Maurer					5	0.5			0.5	6
Actual charged to project			3		13	2.5	9	1.5	1	30

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Biljana Petreska					1	1.5				2.5
Aude Billard	1								1	2
Auke Ijspeert	0.5							1		1.5
Actual own resources	1.5				1	1.5		1	1	6

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	1.5		3		14	4	9	2.5	2	36
Planned 18 months	1.5		4		18	6	9	2	1.5	42
Projected 18 months	2.25		4.5		21	6	13.5	3.75	3	54.0

More effort is reported in WP7 due to an unforeseen activity related to the study of crawling parameters to estimate the torque required by the motors of the shoulder during crawling. The activity related to the study of crawling will be expanded in the next period.



1.4.10 Telerobot S.r.l.

TLR Month 12 Effort

Charged to Project

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
David Corsini							0.1		0.15	0.25
Francesco Becchi	0.15						0.45	0.45	0.45	1.5
Giulio Maggiolo							0.2	0.05		0.25
Fabio Repetto	0.13							1.17		1.3
Gabriele Tabbita							1			1
Paolo Maurel							1			1
Mauro Levaro	1.2						0.3			1.5
Actual charged to project	1.48						3.05	1.67	0.6	6.8

Own Resources

Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
David Corsini							0.1		0.15	0.25
Francesco Becchi	0.15						0.45	0.45	0.45	1.5
Giulio Maggiolo							0.2	0.05		0.25
Fabio Repetto	0.13							1.17		1.3
Gabriele Tabbita							1			1
Paolo Maurel							1			1
Mauro Levaro	1.2						0.3			1.5
Actual own resources	1.48						3.05	1.67	0.6	6.8

Total Effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total	2.96						6.1	3.34	1.2	13.6
Planned 18 months	1.5						3.8	6	1	12.3
Projected 18 months	4.44						9.15	5.01	1.8	20.4

The increased effort in WP7 is due to unexpected activities in the integration of some sub-components. In particular more effort than expected was devoted to the design of the robot arm and hand.



1.4.11 European Brain Research Institute

EBRI Month 12 Effort

Charged to Project										
Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Emilio Bizzi										
Actual charged to project										

Own Resources										
Name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Actual 12
Actual own resources										

Total Effort										
	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total
Actual Total										
Planned 18 months	1.5		3						1.5	6
Projected 18 months										

EBRI Remark on effort

In this initial part of the project EBRI's participation has been mostly through meetings between the coordinator and Prof. Bizzi to discuss the overall experimental plan of the project. The participation of EBRI to the project's activities during the first year of the project has been much smaller than planned because of Prof. Bizzi's unforeseen engagements at MIT.

It is expected that EBRI participation will become more active and continuous during the second year because of the full-time presence of Prof. Bizzi at EBRI in Rome.



1.5 Tabular overview of costs

Cost Budget Follow-up Table										
Contract N°: 4370		Acronym: RobotCub					Date: Sep-05			
PARTI-CIPANTS	TYPE OF EXPENDITURE (as defined by participants)	BUDGET f	ACTUAL COSTS (EUR)					Total ft	Pct. spent st/act*act/ret/f	Remaining Budget (EUR) f-ft
			Period 1 a1	Period 2 b1	Period 3 c1	Period 4 d1	Period 5 e1			
UGDIST	Total Person-month	460.0	68.0					68.0	15%	392
	Personnel costs	1,574,500	251,583					251,583	16%	1,322,917
	Competitive calls	1,000,000						0	0%	1,000,000
	Other costs ('the rest')	2,092,858	209,000					209,000	10%	1,883,858
	Total Costs	4,667,358	460,583	0	0	0	0	460,583	10%	4,206,775
SSSA	Total Person-month	217.0	34.7					34.7	16%	182
	Personnel costs	652,500	101,066					101,066	15%	551,434
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	361,500	46,866					46,866	13%	314,634
	Total Costs	1,014,000	147,932	0	0	0	0	147,932	15%	866,068
UNIZH	Total Person-month	94.0	22.4					22.4	24%	72
	Personnel costs	388,000	120,537					120,537	31%	267,463
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	339,000	19,936					19,936	6%	319,064
	Total Costs	727,000	140,473.2	0.0	0.0	0.0	0.0	140,473.2	19%	586,527
UNIUP	Total Person-month	90.0	30.0					30.0	33%	60
	Personnel costs	409,500	131,468					131,468	32%	278,032
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	460,500	74,473					74,473	16%	386,027
	Total Costs	870,000	205,941	0	0	0	0	205,941	24%	664,059
UNIFE	Total Person-month	182.0	44.0					44.0	24%	138
	Personnel costs	460,000	133,719					133,719	29%	326,281
	Major cost item 'Tobii eye tracker'	50,000	42,864					42,864	86%	7,136
	Other costs ('the rest')	343,000	21,773					21,773	6%	321,227
	Total Costs	853,000	198,356	0	0	0	0	198,356	23%	654,644
UNIHER	Total Person-month	137.0	47.5					47.5	35%	90
	Personnel costs	492,249	163,784					163,784	33%	328,465
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	238,270	111,938					111,938	47%	126,332
	Total Costs	730,519	275,722	0	0	0	0	275,722	38%	454,797
IST	Total Person-month	118.0	35.0					35.0	30%	83
	Personnel costs	530,000	109,124					109,124	21%	420,876
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	619,000	138,677					138,677	22%	480,323
	Total Costs	1,149,000	247,801	0	0	0	0	247,801	22%	901,199
UNISAL	Total Person-month	155.0	32.5					32.5	21%	123
	Personnel costs	647,064	104,757					104,757	16%	542,307
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	291,936	13,228					13,228	5%	278,708
	Total Costs	939,000	117,985	0	0	0	0	117,985	13%	821,015
EPFL	Total Person-month	144.0	36.0					36.0	25%	108
	Personnel costs	594,960	148,740					148,740	25%	446,220
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	284,992	29,748					29,748	10%	255,244
	Total Costs	879,952	178,488	0	0	0	0	178,488	20%	701,464
TLR	Total Person-month	43.0	9.5					9.5	22%	34
	Personnel costs	225,600	54,398					54,398	24%	171,202
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	162,720	22,634					22,634	14%	140,086
	Total Costs	388,320	77,032	0	0	0	0	77,032	20%	311,288
EBRI	Total Person-month	11.0	0.0					0.0	0%	11
	Personnel costs	150,000	0					0	0%	150,000
	Major cost item 'y'							0	0%	0
	Other costs ('the rest')	40,000	0					0	0%	40,000
	Total Costs	190,000	0	0	0	0	0	0	0%	190,000
TOTAL	Total Person-month	1,651.0	359.6	0.0	0.0	0.0	0.0	359.6	22%	1,291
	Personnel costs	6,124,373	1,319,176					1,319,176	22%	4,805,197
	Major cost item 'y'	1,050,000	42,864					42,864	4%	1,007,136
	Other costs ('the rest')	5,233,776	688,273					688,273	13%	4,545,503
	Total Costs	12,408,149	2,050,313	0	0	0	0	2,050,313	17%	10,357,836



First Management Report

Development of a cognitive humanoid cub

1.6 Tabular view of effort

Person-Months Status Table

Contract No. 4370
 Acronym RobotCub
 Period 1/9/2004 - 31-8-2005

	ALL WPs				WP1				WP2				WP3				WP4				WP5				WP6				WP7				WP8				WP9			
	Total Budget '18	Total Actual '12	Total Actual Own '12	Total Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12	Budget '18	Actual Total '12	Actual Own '12	Actual Charged '12				
UGDIST	100	68	31	37	24	7	6	1	8	9	4	5	12	13	2	11	12	8	6	2	4	2	2	0	4	0	0	0	12	11	5	6	12	10	2	8	12	8	4	4
SSSA	70.6	34.7	16.5	18.2	1.5	0.5	0.5	0	4	1.5	1.5	0	10	3	3	0	0	0	0	0	16	5.2	5.2	0	0	0	0	0	28	21.5	3.3	18.2	8.6	2.5	2.5	0	2.5	0.5	0.5	0
UNIZH	31	22.4	11.5	10.9	1.5	1	0.3	0.7	10	6.2	3.5	2.7	9	6.1	3.9	2.2	6	3.8	1.6	2.2	3	0.5	0.2	0.3	0	0	0	0	0	2.5	1	1.5	0	1.3	0	1.3	1.5	1	1	0
UNIUP	27	30	6	24	1.5	0	0	0	12	8	4	4	6	14	1	13	6	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	1	1	0
UNIFE	51	44	21.5	22.5	1.5	1.5	0	1.5	6	5	4.5	0.5	12	15	4.5	10.5	12	8	3.5	4.5	6	6.5	3	3.5	12	7	5.5	1.5	0	0	0	0	0	0	0	0	1.5	1	0.5	0.5
UH	54.5	47.5	26.5	21	2.5	1.7	1.7	0	4	0.7	0.7	0	0	0	0	0	4.5	0.8	0.8	0	12	5	3	2	30	38.3	19.3	19	0	0	0	0	0	0	0	0	1.5	1	1	0
IST	40	35	17.5	17.5	1.5	1	0.5	0.5	3	2	1	1	8	6	3	3	6	4.4	2.2	2.2	8	5.6	2.8	2.8	0	0	0	0	8	12	6	6	4	3	1.5	1.5	1.5	1	0.5	0.5
UNISAL	51	32.5	20.5	12	1.5	1	1	0	0	0	0	0	12	7.5	5.5	2	6	3	2	1	0	0	0	0	0	0	0	0	24	18	9	9	6	2	2	0	1.5	1	1	0
EPFL	42	36	6	30	1.5	1.5	1.5	0	0	0	0	0	4	3	0	3	0	0	0	0	18	14	1	13	6	4	1.5	2.5	9	9	0	9	2	2.5	1	1.5	1.5	2	1	1
TLR	12.3	13.6	6.8	6.8	1.5	2.96	1.48	1.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.8	6.1	3.05	3.05	6	3.34	1.67	1.67	1	1.2	0.6	0.6
EBRI	6	0	0	0	1.5	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	0
Total	485	364	164	200	40	18.2	13	5.18	47	32.4	19.2	13.2	76	67.6	22.9	44.7	52.5	35	16.1	18.9	67	38.8	17.2	21.6	52	49.3	26.3	23	84.8	80.1	27.4	52.8	38.6	24.6	10.7	14	27.5	17.7	11.1	6.6

NOTE: "Budget" is for 18 months while "Actual" is for 12 months



1.7 Summary of major deviation

As reported in section 1.1 the overall cost of the first year present a significant difference with respect to the Technical Annex because of a substantial under-spending of UNISAL (about 120,000), SSSA (about € 65,000) and UNIFE (€ 33,000) only partially compensated by over-spending of UNIUP (about € 32,000). Furthermore EBRI did not actively participate to the project's activities of the first year. Refer to the table in section 1.1.2 for more details.

As to the effort spend during the first year, the comparison with the Technical Annex can only be made with reference to the 18 months figures. Extrapolating from the effort reported at month 12, it is expected that at the end of month 18, the consortium shall have invested about 12% more effort than originally planned. This is the net result of more effort being spent by some partners (e.g. UNIUP, UNIFE, UNIHER, IST, EPFL and TLR) and a smaller effort being invested by some partners (SSSA and EBRI).

Altogether this increase in effort and decrease in cost is explained by the fact that, in this initial year, the work carried out by some partners has been supported by other sources. At the moment our forecast is that this lower cost of the first year will be compensated by an increase of effort during the second, crucial, year of the project.

However, it is the intention of the consortium to re-evaluate the subdivision of budget submitted originally in the Technical annex at the light of the results obtained, the work planned and its distribution as well as a better definition of the iCub design.



2 Form C Financial statement per activity



3 Summary financial report