

# Status of CARE

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# CARE

Submitted on April 15<sup>th</sup>, at 11:35



## General outlines of the CARE project (reminder)










### ➔ Participants

Participation from 17 Countries (contractors are from 9 countries):

**Belgium, Finland, France, Germany, Italy, Latvia, Netherlands, Poland, Portugal, Russia, Spain, Sweden, Switzerland, UK (+ Japan, New Zealand and US)**

All together about **116 institutes (24 contractors + 80 associated institutes + 12 industrial partners)**

- **Most PP labs** (CCLRC(RAL+Daresbury), CEA/Saclay, CERN, DESY, IN2P3/Orsay, LNF, PSI)
- **Several NP labs** (GSI, IPN-Orsay, Juelich, Legnaro)
- **A few Synchrotron Radiation Labs** (DESY, Elettra, Rossendorf)
- **large number of universities**
- **Several (12) industrial partners** (Accel, Zanon, WSK, Alsthom, Vac, MSI...)

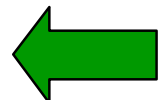
									
Contractors	UCLN	CEA, CNRS	DESY, GSI, FZJ, IAP-FU, FHG, TUM, FZR	INFN, ELETTRA	TEU	TUL, IPJ, WUT-ISE, WUT	CSIC	CERN, UNI-GE, PSI	CCLRC, ICL, UMA
associates		11 (CNRS)	6 (DESY) 2 (FZJ)	14 (INFN)			5 (CSIC)	22 (CERN) 3 (UNI-GE)	10 (ICL) 7 (UMA)
Industrials			4 (DESY)			1 (WUT)		3 (CERN)	4 (CCLRC)

➔ Scientific and Administrative Coordination:

**CEA/DSM/DAPNIA**

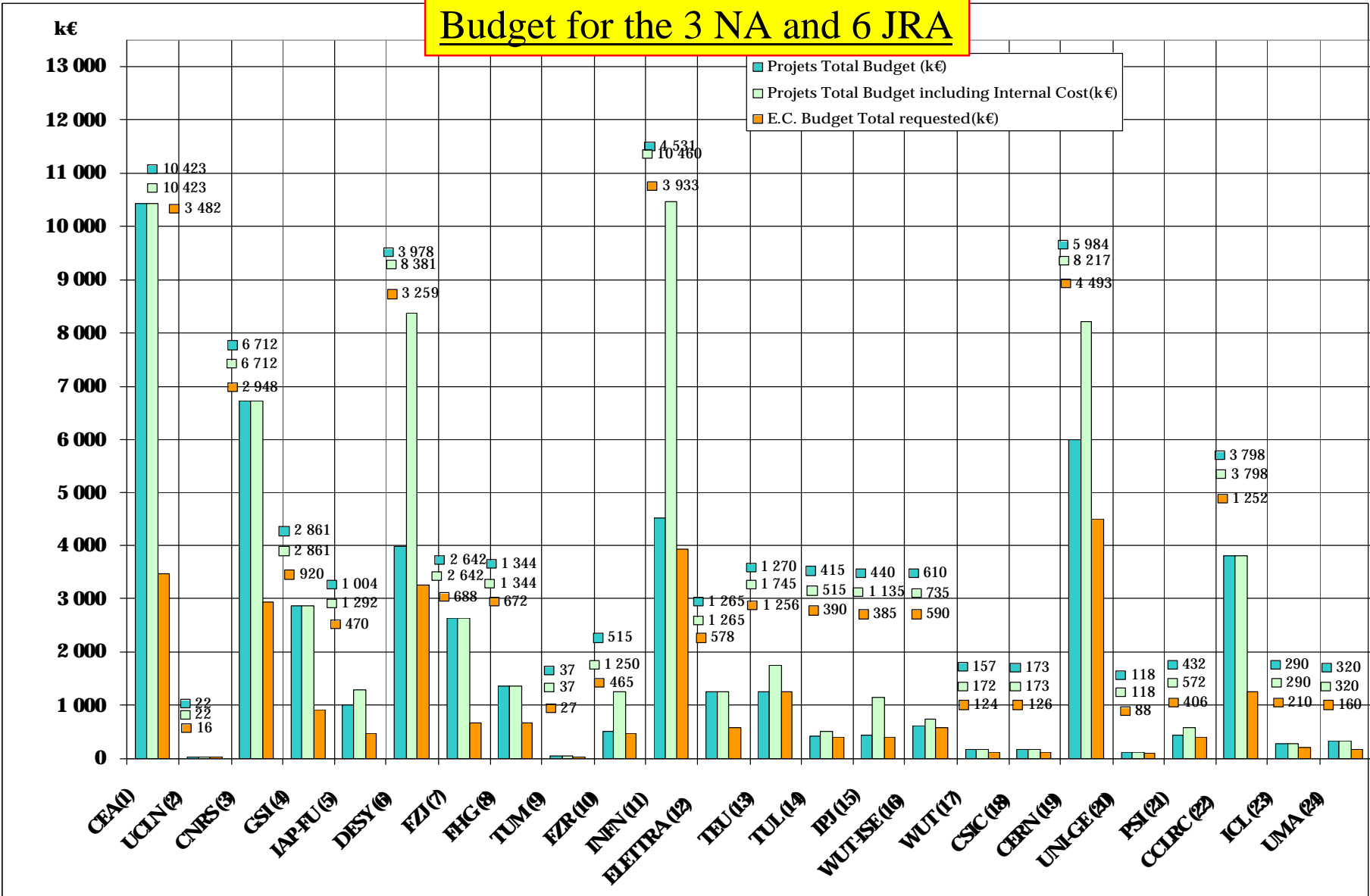
➔ Cost

**Overall Requested EU Contribution 29 M€**



**Total Budget: 51.6 M€ (66.8 M€ including all internal costs)**  
**Total Requested EU Contribution: 29 M€**

**Budget for the 3 NA and 6 JRA**



## Evaluation process

Referees have examined the Proposals, individually and remotely first

Then, they had a first joint meeting mid June

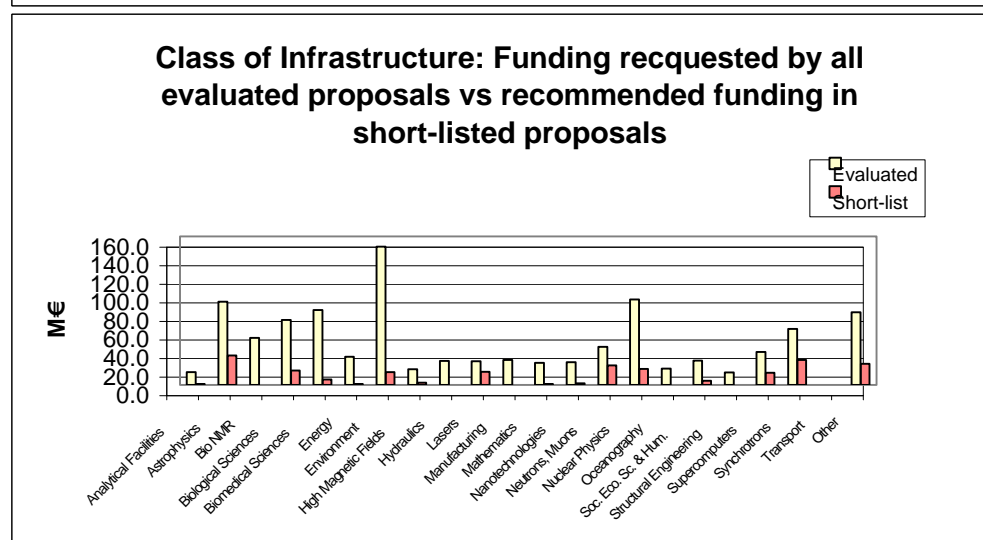
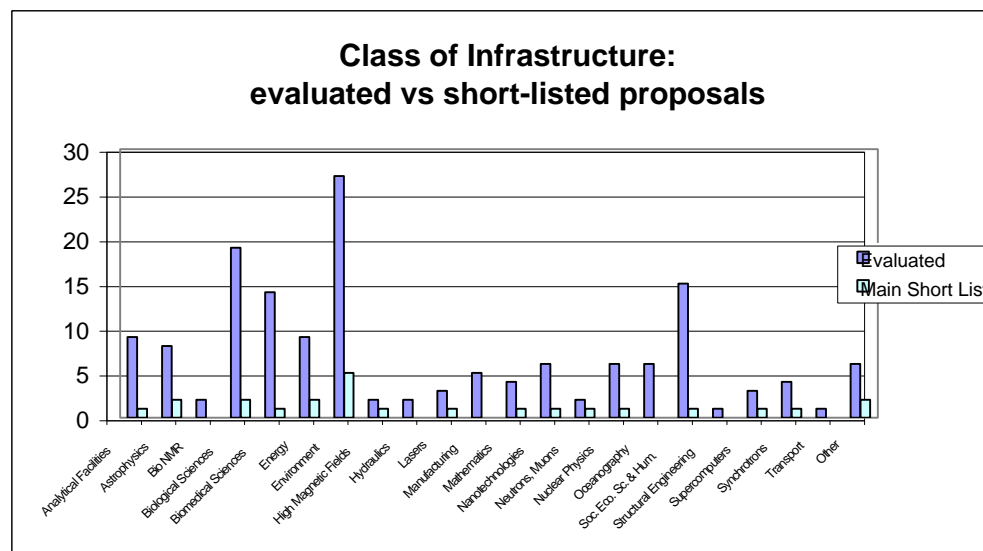
They had a second (final) meeting mid July (14-18) to rank the proposals and make funding recommendations (for a total available fund of 190 M€)

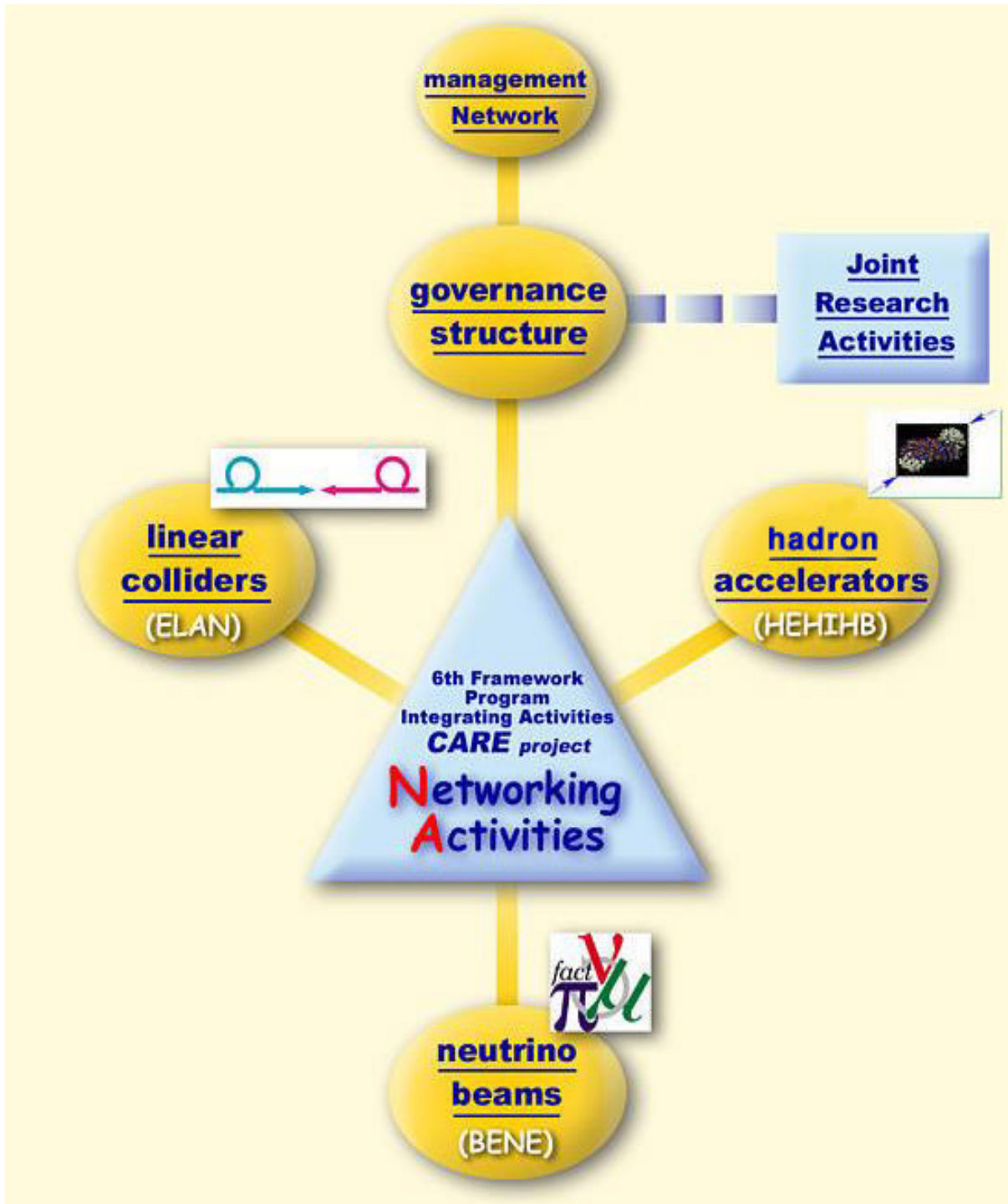
### Statistics on the Proposal submitted to the call

Area / Instrument	# of proposal received	# of eligible proposal	Funding requested (M€)	# of accepted proposal in short list	Accepted Funding (M€) Short list
Area 3.2.1: Transnational Access	87 (55%)	84	117.7 (11.9 %)	9 (5.8%)	11.9
Area 3.2.2 : Integrating Activities					
-Co-ordination Actions i.e. only networkings	12 (8%)	12	66.4 (6.7 %)	1 (0.7%)	2.7
- Integrated Infrastructure Initiatives	59 (37%)	58	808.1 (80.6 %)	14 (9.1%)	179.1
<b>Total</b>	<b>158</b>		<b>992.2</b>	<b>24</b> <b>(15.6%)</b>	<b>193.7</b>

Table 11: Class of Infrastructure in proposals evaluated and in the main short-list

Class of Infrastructure	Evaluated		Main Short List	
		EC req. contr. (M€)		Recommended Contribution (M€)
Analytical Facilities	9	13.9	1	0.9
Astrophysics	8	89.8	2	31.6
Bio NMR	2	50.8	0	0.0
Biological Sciences	19	69.9	2	15.7
Biomedical Sciences	14	80.7	1	6.0
Energy	9	30.2	2	1.2
Environment	27	149.0	5	13.9
High Magnetic Fields	2	16.8	1	2.3
Hydraulics	2	25.8	0	0.0
Lasers	3	25.4	1	14.2
Manufacturing	5	26.9	0	0.0
Mathematics	4	23.8	1	0.9
Nanotechnologies	6	24.5	1	1.6
Neutrons, Muons	2	41.0	1	21.0
Nuclear Physics	6	92.1	1	17.4
Oceanography	6	17.7	0	0.0
Soc. Eco. Sc. & Hum.	15	26.4	1	4.4
Structural Engineering	1	13.5	0	0.0
Supercomputers	3	35.6	1	13.0
Synchrotrons	4	60.2	1	27.0
Transport	1	0.1	0	0.0
Other	6	78.3	2	22.7
<i>Other - Accelerators</i>	1	29.0	1	15.2
<i>Other - Astroparticles</i>	1	17.3	1	7.5
<i>Other - Com. Technologies</i>	1	22.3	0	0.0
<i>Other - Sensors</i>	2	9.0	0	0.0
<i>Other - Space Technology</i>	1	0.6	0	0.0
<b>Total</b>	<b>154</b>	<b>992.2</b>	<b>24</b>	<b>193.7</b>





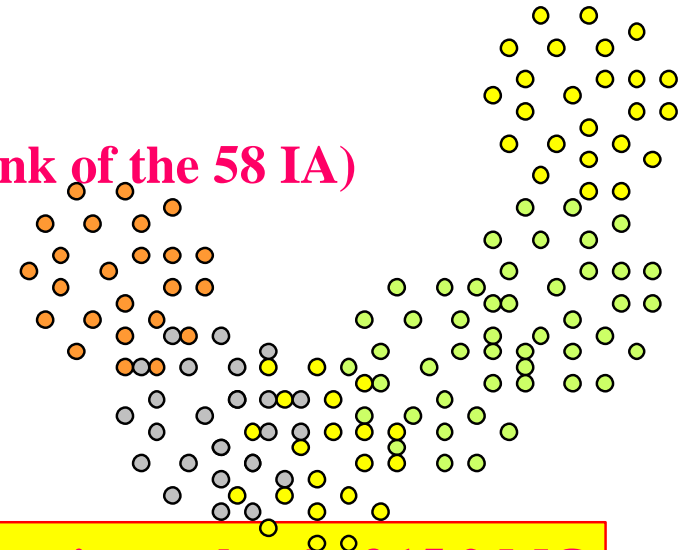


## Result for CARE

CARE is ranked at the 14<sup>th</sup> position (5<sup>th</sup> rank of the 58 IA)



CARE is accepted



CARE is recommended for funding at **the maximum level of 15.2 M€** (i.e. 52% of initial request) in the Evaluation Summary Report (ESR)

However with very different funding level within CARE

- All networking activities (N1-4) should be funded at **the maximum level of 30%**
- JRA1 and JRA2 should be merged and funded at **the maximum level of 65% (i.e. 5.1 M€)**
- JRA3 should be funded at **the maximum level of 90% (i.e. 3.6 M€)**
- JRA4 should be funded at **the maximum level of 90% (i.e. 3.6 M€)**
- JRA5 should be funded at **the maximum level of 25% (i.e. 1.0 M€)**
- JRA6 should be postponed to the next call for design studies



# Evaluation Summary Report

## Integrating Activity implemented as Integrated Infrastructure Initiative (I3)

<b>Proposal Number: 506395</b>	<b>Acronym: CARE</b>
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### 1. Generalities

Being able to identify and prioritise the research that is fundamental and necessary in the next 20-30 years, is an enormous success

The development of accelerators for particle physics can lead to substantial advances in other fields where particle accelerators are a key instrument, like synchrotron radiation and free-electron laser light sources.

CARE has brought together teams active in accelerator physics who had not collaborated before.

### 2. Networking Activities

This logical scheme is consistent with the recommendations from ECFA.

There is economy to be applied by using more of the existing meetings and conferences that take place instead of organising additional ones, and video conferencing.

Some of the activities that are described in N2 – N4 point clearly to future facilities and their prospects. They would be much served by a DS.

N2-4 activities show a structured approach to disseminate the knowledge. The education of a new generation of experts in accelerator physics and technology is addressed appropriately.

### 3. Joint Research Activities

JRA1 focus on methods to increase the accelerating field in sc cavities, topic of very broad interest. Objectives are clearly specified and it's a very strong proposal.

JRA2 develops subsystems of higher gradient cavities. The evaluation members propose to combine the two JRA's; better co-ordination and more efficient application of funds → propose to reduce the resources for these activities at ~65%.

JRA3 on Photo injectors. The focus on higher intensity and higher brightness is right. Spin offs are expected, e.g. synchrotron radiation sources, electron linacs and high brightness / high intensity beam applications. The resources for this activity are adequate.

JRA4 on HIPPI addresses issues that are basic and necessary to solve and they are appropriately addressed. Deliverables are clear.

JRA5 on Next European SC dipole is particularly important in order to maintain and support in Europe a top quality infrastructure. Quite important spin-offs is expected from the mastering of the use of the Nb<sub>3</sub>Sn superconductor (LHC upgrade). CERN should extent its leadership role with adequately funded R&D also. Since this R&D is ongoing in conjunction with the construction of the LHC a sustained effort is guaranteed for some time. → propose a lower level (~ 25%).

JRA6 on Global Accel. Network is the least pressing. This is mainly an activity that will not affect existing or near term future facilities and should be deferred completely to the next FP call on JRA's for future facilities.

### 4. Conclusions

The general leadership structure presented throughout the proposal is very strong and we comment the proposers for the thorough approach.

The work being done under these proposed JRAs will fan out into other areas of accelerator physics and application, such as colliders, light sources, spallation sources, neutrino physics and even medical applications.

Generally all evaluators were very impressed with the quality of the proposal and support it. As regards resources the following recommendation are made: for the networking activities 30%, for the combined JRA 1+2 65%, for the JRA3 and JRA4 90% and JRA5 at 25%.

## What next

According to the referee's recommendation, the Commission sent to R.A. a letter

- informing ESGARD about the referee's recommendations
- setting up the **maximum** funding level (15.2 M€) and period (60 months)
- Offering to proceed to contract negotiations for CARE

Should we accept, we have to return the Contract Preparation Forms (CPF)

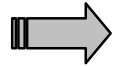
before September 12<sup>th</sup>

“Failure to respect this deadline will be considered by the Commission as a wish **not to enter** into the contract negotiations and therefore **to withdraw** your proposal. In such a case, the **Commission will initiate the procedures to reject your proposal.**”

Then, we will have until **October 15<sup>th</sup>** to conclude the contract

## Next immediate step

**First EU deadline: September 12**



*Redefine CARE project according to EU recommendations*

**This step is necessary to satisfy the recommendations**

Cost reduction using 3 main means:

- Reduce management costs (e.g. use more video/audio meeting, travel cost covered by the labs...)
- Reduce requested cost from EU by
  - reduce manpower costs (use more lab personal wherever possible). Labs could try to apply for special grants.
  - higher contribution from the labs (using time schedule); might be easier for 2005 –on.
- Reduce proposal scope in some areas (but only if really no other ways)

*Reorganize NA and JRA management accordingly if required*

**Deadline for this task, August 20**

## Conclusions

**Very favorable outcome for the CARE project.**

- **CARE accepted with extremely strong evaluation report**
- **Ranking is very good (14<sup>th</sup> out of 154 proposals or 5<sup>th</sup> out of 58 IA)**
- **Recommendation for 15.2 MEuro**  
**(52% of our request, i.e. slightly better than average)**

It is a premiere in Europe

- **For particle Physics to be successful on a large scale project in EU**
- **To have set up an integrated and coordinated Accelerator R&D program**  
**(in line with ECFA recommendations)**
- **To be recognized as a priority program by EU (opening the door for further R&D program (e.g. Design Studies))**
- **We have an excellent reputation at the EC**

However, we need to make the strong efforts to redefine CARE in line with the recommendations, and to successfully run the whole project, in particular the work-packages

## N2 in the CARE proposal INITIAL VERSION

**Title:** Coordination of studies and technical R&D for electron linear accelerators and colliders

**Acronym:** ELAN, **Coordinator:** F. RICHARD (CNRS-IN2P3-Orsay)



### **Participants to the N2 Activities:**

Country	Number of institutes	Number of persons
Finland	1	3
France	8	70
Germany	12	130
Italy	5	45
Netherlands	2	7
Poland	3	20
Portugal	1	3
Spain	3	9
Sweden	1	2
Switzerland	2	3
United Kingdom	15	60
CERN	1	30

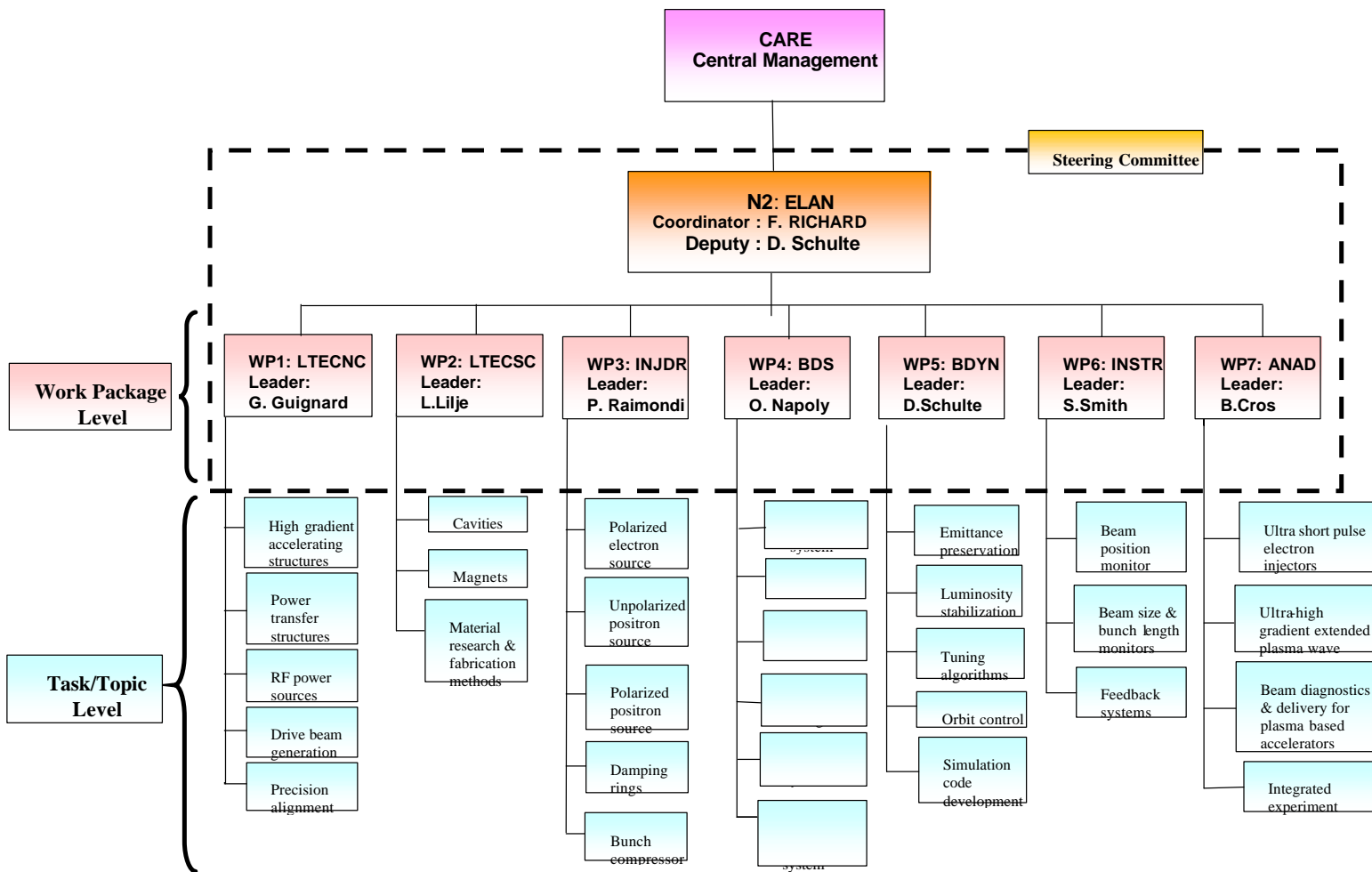
### **Industrial Involvement:**

Country	Number of Company
Germany	4
Italy	1
UK	4

**Main Objectives:** Coordination of R&D on electron accelerators at the European level. Evaluating the various technologies for improving the present infrastructures and defining a roadmap for future electron accelerators and colliders, including new techniques of acceleration.

### **Cost:**

Expected Budget	Requested EU Funding
3.8 M€	1.9 M€



## N2 in the CARE proposal (updated)

**Title:** Coordination of studies and technical R&D for electron linear accelerators and colliders

**Acronym:** ELAN, **Coordinator:** F. RICHARD (CNRS-IN2P3-Orsay)



### **Participants to the N2 Activities:**

Country	Number of institutes	Number of persons
Finland	1	3
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Poland	3	20
Portugal	1	3
Spain	3	9
Sweden	1	2
Switzerland	2	3
United Kingdom	15	60
CERN	1	30

### **Industrial Involvement:**

Country	Number of Company
Germany	4
Italy	1
UK	4

**Main Objectives:** Coordination of R&D on electron accelerators at the European level. Evaluating the various technologies for improving the present infrastructures and defining a roadmap for future electron accelerators and colliders, including new techniques of acceleration.

### **Corrected Cost:**

Expected Budget	Requested EU Funding
3.3 M€	0.674M€



#### 4. Modifications proposed after the Evaluation Report

The referee's Evaluation Report recommends a reduction of the network activity which, to our understanding, should focus on **existing facilities** and on **disseminating the knowledge**. We therefore propose to keep WP1 and WP2, related to the CERN et DESY test facilities. WP5, related to beam dynamics and modelisation will also be maintained since it provides the software tools to monitor these facilities and since it should be instrumental to transfer the essential accelerator concepts to WP6 and WP7.

Concerning the financing of the network activities:

- we would completely give up our demand (500k€) on the ILC-TRC activities, which should be hopefully be funded by a future Design Study for the Global Linear Collider
- we would keep only one ELAN plenary meeting per year (reduction by 500k€), which in our opinion constitutes an absolute minimum
- we are very keen to maintain the resources for specific working meetings for the network, which are an essential tool to perform our work

The reduction in the number of WP can allow further savings but one should not forget that some activities of the suppressed WP will be transferred like, for instance, the work on the photo-injector (corresponding to the JRA on a photo-injector) which will go from WP3 to WP1.

Further savings can be obtained for the WP connected to the LC JRA by having common meetings since there is a large overlap between the two communities.

We therefore estimate that the minimal funding needed is:

- |   |
|---|
| <ul style="list-style-type: none"><li>• <b>340k€ for the ELAN plenary meetings (one per year)</b></li><li>• <b>340k€ for specialized meetings for the network (5 per year with about 17 participants)</b></li></ul> |
|---|

The total amount of money requested goes beyond 30 % of the initial request but the two JRA involved in LC have manifested their interest and solidarity to ELAN by providing 100 k€ to complete the difference.

To cope with these figures, we have readjusted the cost table, taking into account the transfer of the photo-injector activity on WP1.

Finally, one assumes that the money provided by the participants which is used for collaboration meetings and participation to standard conferences and workshops, and the manpower will remain constant.

