European Detector R&D and FP7 - background

- Two CN (Construction of New Infrastructures – support for preparatory phase – including some detector R&D activities) and Two Design Study proposals have gone in this year - plus many Marie Curie proposals

- New call for IA in Novembers.
  - ESGARD preparing proposal for accelerator R&D (as follow up to CARE) for this call
  - IA potentially very useful for infrastructures related to common R&D – for detector development for SLHC, Linear Colliders, Neutrinos, etc

- Note: will re-use many slides from R.Aleksans talk in ESGARD workshop 2 weeks ago (whenever there are some nice colours): http://esgard-omia.web.cern.ch/ESGARD-OMIA/Programme.html

FP7-Planning of calls and indicative budget

Total operational budget 1665 M€	Call 1 2007	Call 2 2007	Call 3 2008	Call 4 2008	Call 5 2009	Call 6 2010	Call 7 2012
Integrating activities			277			x	x
e-Infrastructures	42	50		113	x		x
Design studies	31					x	
Construction – Support to the Preparatory Phase	147					x	
Construction – Support to the Implementation Phase		RSFF (200 M€) + 130 M€					
Policy Development and Programme Implementation	8	14	5		x	x	x
Total per call (M€)	228	64	282	113			

General information

Proposals submitted at the 1st round of FP7 calls

Activity	Number of Proposals	Funding requested (M€)	Call Budget (M€)	Oversub scription factor
ICT based e-infrastructures	68	228	42	5,4
Design studies	49	136	31	4.4
CNI-Preparatory phase	34	205	147	1,4
Support to Policy development + …	8	~12	8	
Total	**159**	**580,9**	**228**	**2,5**

Accelerator R&D proposals submitted by our community on May 2nd, 2007

- 2 CNI-preparatory Phase (SLHC and ILC)
- 2 DS (EuroNu and EUROCRAB)

Summary of Accelerator R&D projects proposed in FP7 1st call

Accelerator R&D proposals submitted by our community on May 2nd, 2007

- 2 CNI-preparatory Phase (SLHC and ILC)
- 2 DS (EuroNu and EUROCRAB)

Project	Type	Beam Type	Start date	Duration Years	Total Cost	EC contribution
SLHC Preparatory	CNI	proton	1/1/08	3	11.3 M€	5.2 M€ (~80%)
ILC-HiGrad Preparatory	CNI	e^+,e^- (LC)	1/1/08	3	10 M€	5.0 M€ (~70%)
EuroNu	DS	neutrino	1/1/08	4	14.4 M€	4.0 M€ (~83%)
EuroCRAB	DS	e^+,e^- (also p)	1/1/08	3	6.44 M€	0 M€
Total					>42 M€	14.2 M€ 65%

European Detector R&D and FP7 – proposal

- A Detector R&D planning group for FP7 – set up by RECFA
  - To coordinate the IA applications to maximize the chances for success, involving the European community as a whole. Aim for a small number (1-3) good proposals allowing the European community to be correctly represented in them
- Compositions: Need reps from CERN, DESY, ATLAS, CMS, EUDET, plus one more covering R&D for neutrinos, plus someone covering flavour physics detectors – plus leader appointed by RECFA.
  - The main idea is to use existing R&D organizational structures well interfaces with the groups and FAs participating in LHC, linear collider detector R&D, neutrino detector R&D, etc.
- Mandate: Propose outline of IA applications and organization by Berlin meeting, and follow up in our meetings in December and Feb/March next year
- Work for national detector R&D representatives to make sure we cover most areas, and to help with national coordination

A Committee for Detector R&D

Dear RECFA members,

In the Manchester RECFA meeting it was agreed to set up a coordination group for detector R&D submissions to the FP7 EU programs. Norman McCubbin and Steinar Stapnes will follow up and report again about this point in the Berlin RECFA meeting.

An European Coordination Group for Detector R&D:

The successful model for such a group is ESGARD covering accelerator R&D. For detector R&D the activities are much more widely distributed and the major stakeholders are the main experiments being planned for SLHC, ILC (EUDET), Neutrino and Flavour physics. It is therefore suggested to create a COORDINATION GROUP with representatives for these planned experiments plus CERN and DESY. The believe is that most of the European detector R&D are focussed and organised as part of these collaborations or proto-collaborations. The detector R&D coordination group must also have effective links to ESGARD to make sure the plans concerning submissions to EU programs in the areas of accelerator R&D and detector R&D are coherent.

A reference group with national representatives:

However, given that detector R&D is very widely distributed activity with many potential project partners, during this process it is important to have a DISCUSSION PARTNERS in each European country that can:

- Help to identify the major detector R&D activities in each country
- Help to identify one (or a few) potential contract partners for EU proposals in the area of detector R&D (this could typically be national labs taking on coordinations roles within one country, or a leading institute)
- Provide guidance to the co-ordination group during the planning phase (mails and information concerning the coordination groups work will be distributed to these national contacts).

I would therefore ask you to suggest a NAME OF A NATIONAL CONTACT for your country for detector R&D activities becoming part of the reference group by answering this email as soon as possible. Until we receive a name from you we will use the RECFA representative as contact.

Please reply to me with copies to Steinar Stapnes, Norman McCubbin and Peter Hansen.

Best wishes,

Karlheinz Meier

Motivation for coordination

- ATLAS and CMS have 10-20 active R&D areas each for SLHC upgrade - involving many groups across Europe and outside

  EUDET have ongoing EU project (FP6-I3) hosted by DESY - ends by end 2009 - as seen at the link above.

  In the neutrino area and flavour area specific detector R&D is foreseen or ongoing.

  CERN has R&D activities in white paper, overlapping partly with (and participating in) the activities above.

  Unless coordinated there will be a (large?) number of competing IA proposals from our community

  Furthermore, there is clear need to improve contact between R&D groups in these areas and also use European infrastructures for these R&D activities are efficiently as possible (testbeams, irradiation facilities, integration areas, facilities with magnets or cryogenic infrastructures, etc)

  Note: ESGARD have already decided to collect accelerator R&D in all the areas above (and CLIC) into one single IA application.

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Total per call (M€)	228	64	282	113			

ESGARD actions (cont'd)

ESGARD decided to set-up working groups to help developing consistent set of research activities, in line with the priorities stated in the Strategy Document adopted by the CERN Council, and that could be imbedded in an (or several) Integrated Activity (IA) project(s)

Milestones (backward in time)

Assuming IA opening/closing Call is Nov.2007/Feb.2008

- **Final selection & Beginning of Write Up : Fall 2007**
- ✓ **Decision on number of IA and scope : Summer 2007**
- ✓ **1st Selection + Priority of R&D Items : Spring 2007**
- ✓ **First meeting of the 3 PGps at CERN 30-10-2006**

- High-intensity, High-energy Proton Beams (convener: R. Garoby)
- Novel Accelerating Systems (convener: E. Jensen)
- Superconducting RF Acceleration System (convener: O. Napoly)

ESGARD is overseeing closely the progress in 2007 during its meetings

Summary of WG as of today

WG	HHPB	NAS	SRFAS	sum	CARE (EC:M€)
# Networks	2	1	3	**6**	4 (EC:2)
# Access	2	2	2/3	**6/7**	n/a
# JRA	4	8	5	**17**	4 (EC:13.2)
Total cost (M€)	29.1	46.8	41.5	**117.4**	55 (EC:15.2)

Different degree of preparation toward IA
Total cost still very large!

FP7 Call 3 outline (1)

- **For Integrating Activities and Support to policy development and programme implementation**
- **Publication: 15 November 2007**
- **Closure: 15 February 2008**
- **Indicative budget for Integrating Activities: 277 M€ for both bottom up (~160 M€) and targeted approach (~120 M€)**

  note: 2 others calls for IA in 2010 and 2012 (this last call would have only limited budget
- **Indicative budget for Policy dev^{t}: 5 M€**
- **Results within 4 months after closure date**
- **First contracts will come into force before the end of 2008**

FP7 Call 3 outline (2)

- **Procedure for evaluation**
  - ➔ **remote + panel evaluation**
- **1 Panel organised in 5 thematic sub-panels***
  - ➔ **Material sciences and energy**
  - ➔ **Physics, astronomy**
  - ➔ **Biomedical and life sciences**
  - ➔ **Environmental sciences**
  - ➔ **Social sciences and humanities**

**** Computer and data treatment experts in each sub-panel***

Expected size of an Integrating Activity under FP7

- Duration: 4 years max
- Number of contractors: 20 (FP6 average)
  - ➔ Experience shows that a project with more than 20 contractors is difficult to manage
  - ➔ *Not all partners need to be contractors*
- EC contribution:
  - ➔ *We expect most of the projects to be in the range of 4 to 6 M€ with a limited number of projects reaching 10 to 15 M€ in justified cases (e.g. facilities serving exceptionnaly wide community of users)*

Providing Guidelines

In order to help converging on a consistent and outstanding proposal(s), it would be desirable that ESGARD provide guidelines

A Meeting with the founding-directors of ESGARD was held on July 23rd .

The main questions were the following

- What is the duration of the proposal(s) ? **4 years**
- How many IA should we propose ? **1 proposal**
- What should aim at for the total cost of the proposal ? **60 M€ max**
- What should be the total requested EC contribution ? **20 M€ max**

Note : i.e. the ratio EC cost/ total cost = 1/3 on average as in CARE

Call for IAs - summary

- I3: Integrated Infrastructure Initiatives (now called IA: Integrated Activities) … must combine three elements: networking, trans-national access and joint research activities.

  Used successfully and creatively by EUDET in FP6 to support test-beams and other common infrastructures for the R&D and integration activities, building some of the prototypes (used as part of infrastructures), and to provide travel funds for participants – for ILC detector R&D.
  Also used by CARE for accelerator R&D

  The IA call will be on 15 November, deadline 15 February 2008 and then again in spring 2010. These calls are for both the traditional I3 activities and also the new Thematic I3s.

  Scope 277 MEURO.

  Typical size, 4-6 MEURO with 20 participants, can increase to 10-15 MEURO in special cases with more participants, for 4 years (2009-2012)

  Expected to have similar structures to I3s in FP6 (as used by EUDET)

EUDET

- See next talk by Joachim

Accelerator R&D projects co-financed by the EC in FP6

Project	Type	Beam Type	Start date	Duration Years	Total Cost	EU contribution
CARE	I3	All	1/1/04	5	55 M€	15.2 M€
EUROTeV	DS	e^+, e^- (LC)	1/1/05	3	29 M€	9 M€
EURISOL Design Study	DS	Ion, p (ν β–beam)	1/1/05	4	33 M€ (3.3 M€)	9.16 M€ (1 M€)
EuroLEAP	NEST	e Plasma acceleration	1/9/06	3	4.1 M€	2 M€
Total					>121 M€	35.4 M€

Steps

1) Arrange a meeting in September with the following participants:
Joachim Mnich, EUDET and ILC
Nigel Hessey and Jordan Nash, upgrade coordinators ATLAS, CMS
One person representing CERN, Lucie Linssen
One person representing DESY, Rolf Heuer
One person representing neutrino detectors, Alain Blondel or someone he suggests
One person representing flavour factories, Sergio Bertolucci have been asked to suggest name about who to ask
One person from ESGARD (or at least communicate with ESGARD)
The meeting will have four main points - the participants will be asked to provide information about these subjects:
-Collect information about the EU call foreseen in November for Integrated Activities
-Summarize infrastructures for detector R&D that can be supported
-Overview of ongoing R&D
-Discussion of how to organise the activities (to outline possibilities) and budgets
Norman McCubbin and Steinar Stapnes will arrange this meeting.

2) Send a mail to RECFA asking the representatives to send names of national contacts to create a wider reference group. These are people
who should make sure the national communities are informed and help set up link to the national communities later on during the writing phase. This is the mail above.

3) Understand better the ESGARD plans for this EU call and present detector R&D plans to ESGARD to make sure there is full coherence.

4) Meet with FP7 representatives to learn more about the IA call and discuss preferable application models (in October - probably after the Berlin meeting).

5) Report in Berlin RECFA meeting (6.10).

6) If generally supported arrange 1-2 day working meeting early November outlining the proposal(s), WPs, organisation of the writing, budget envelopes, etc

Agenda

Thursday 20 September 2007

top

09:00 Introduction and background (20') — Steinar Stapnes

09:20 EUDET - a working example in FP6 (20') (Slides) — Joachim Mnich

09:40 Overview of major detector R&D planned (1h20')

Please cover three topics (overview only):
Detector R&D topics of interest
Participants and resources involved (personnel and funds)
Main infrastructures used or needed 2008-2012

- EUDET/ILC (10') (Slides) — Joachim Mnich
- ATLAS (10') (Slides) — Nigel Hessey
- CMS (10') — Jordan Nash
- Neutrino detectors (10') — Alain Blondel
- Flavour physics detectors (10') — Francesco Forti
- CERN infrastructures and R&D plans (10') — Lucie Linssen

11:00 Summary and next steps (1h00')

Attempt to summarize:

Main R&D directions (examples would be silicon system, micropattern systems, etc)

Main infratructures (examples would be testbeam with associated support functions, irradiation facilities, integration facilities (cleanroom or similar foreseen to be used to be used to larger tests, etc)

Resources involved (this is relevant to estimate what is the amount of effort and resources we can include as "our own" contribution to an EU project

Possible organisation (for example one large IA or several coordinate ones)

Discuss next steps

More slides

Summarize

- Main R&D directions (examples would be silicon system, micropattern systems, etc)
- Main infratructures (examples would be testbeam with associated support functions, irradiation facilities, integration facilities (cleanroom or similar foreseen to be used to be used to larger tests, etc)
- Resources involved (this is relevant to estimate what is the amount of effort and resources we can include as "our own" contribution to an EU project