

AIDA

Manuel d'utilisation

<https://espace.cern.ch/aida>

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SOCLE 2009

10/11/2009

INSTN, CEA Saclay



Advanced european Infrastructures and Detectors at Accelerators

- † DevDet (Appel FP7 2008) † RIP
 - ⇒ EUDET étendu à ILC/CLIC, sLHC, SuperB, neutrinos
 - SLHC (luminosity-upgraded LHC),
 - future Linear Colliders (ILC and CLIC),
 - future accelerator-driven neutrino facilities
 - or future B-physics facilities (e.g. Super-B)
- The AIDA project is
 - coordinated by the **Restricted ECFA** Coordination Group for Detector R&D in FP7 programs
 - responds to the **FP7-INFRASTRUCTURES-2010-1** call from the European Commission.
- AIDA addresses **infrastructures** required for the **development of detectors for future particle physics experiments**.
In line with the European strategy for particle physics
- AIDA targets **user** communities **preparing experiments** at a number of **key potential future accelerators**:

Vue d'ensemble

- The infrastructures covered by the AIDA project are key facilities required for an efficient development of the future experiments, such as:
 - test beam infrastructures (at CERN and DESY),
 - specialised equipment irradiation facilities (in several European countries),
 - common software tools,
 - common microelectronics tools
 - and engineering coordination offices.
- The requests to EU concern improvements to **existing** infrastructures
 - **Submission deadline is 03/12/2009.**
 - selection: April/May + 2-3m Negotiations + 3m formal agreem^t
 - finalisation by **end 2010**
 - A **4 year** project (3 years if negotiated)

Structure

- The project is structured around 9 work packages :

- | | |
|------------------------------------|-----------------------------------|
| ▪ management, | ▪ transnational access, (TA) |
| ▪ coordination/networking, (COORD) | ▪ joint research activities (RTD) |

- It is managed through:

- | | |
|----------------------------------|---|
| ▪ A set of coordination contacts | ▪ A set of WP coordinators |
| ▪ A set of national contacts | ▪ 2 per WP of different origins (ILC/Other) |
| | ▪ A set of task coordinators |

- Full partner and third party, associate

- Full /3rd limit set at ~ 50 k€ (~1 yr PD)
 - **France: FP = CNRS & CEA**
 - **Univ. as 3rd party → ⚠️ uniq^t engagement de pers. permanent CNRS ⚠️**
- Associate = only travel money

Coordinators & Contacts

Coordinators

T. Behnke	DESY	
C. Brandt	CERN	
K. Büsler	DESY	
M. Capeans	CERN	
F. Forti	CERN	
K. Kahle	CERN	
L. Linssen	CERN	
L. Serin	CNRS	Chair.
C. Sheperd	RL	
P. Soler Jermyn	Glasgow	
S. Stapnes	CERN	
S. Stavrev	CERN	
H. Taureg	CERN	
K. Ross	CERN	

National Contacts

Switzerland	Pohl Martin	
Germany	Feld Lutz	
Spain	Lacasta Carlos	+ Vila Ivan
Portugal	Bordalo Paula	
Netherlands	Koffeman Els	
Israel	Mikenberg Giora	
Czech Republic	Vrba Vaclav	
Poland	Zarnecki Filip	+ Idzik Marek
Austria	Krammer Manfred	
Finland	Osterberg Kenneth	+ Tuominen Eija
Hungary	Bencze Gyorgy	
Sweden	Brenner Richard	
Norway	Stapnes Steinar	
Denmark	Hansen Peter	
Italy	Meroni Chiara	
UK	Long Ken	
Belgium	de Lentdecker Gilles	
Bulgaria	Stamenov Jordan	
France	Boudry Vincent	+ Colas Paul
Greece	Gazis Evangelos	+ Alexopoulos Theodoros
Malta	Sammut Nicholas	
Slovenia	Mikuz Marko	
Slovakia	PiknaMiroslav	
Finland	Härkönen Jaakko	
Bulgaria	laydjiev Plamen Stoianov	

Work packages

WP	Title	Contact	Fonds
1	Project management and coordination	F. Stavrev	500k€
2	Development of software common tools	F. Gäde, P. Mato	1100k€
3	Micro electronics and detector electronics integration	H-G. Moser, V. Re	1100k€
4	Relation with industry	P. Sharp, R. Stapnes	300k€
5	Transnational access to DESY	I. Gregor	100k€
6	Transnational access to CERN	H. Taureg	150k€
7	Transnational access to EU irradiation facilities	M. Mikuz	450k€
8	Improvement and equipment of irradiation and beam lines	H. Taureg, E. Gschwendtner	3000k€
9	Advanced infrastructures for detector R&D	M. Vos, H. Videau	3000k€
			~10 M€

Montants uniquement indicatifs → changements possibles d'ici le 26 novembre

10 M€ ~ correspondants à ~ 33 M€ total (⊃ Overhead)
soit ≥ ~10 M€ engagés (10+10)*160% ~ 30M€

WP2: Common SW tools

Objectives

Activity type COORD

Task1: Coordination of Work package

- monitor the progress of the work in the work package
- coordinate and schedule the execution of the tasks and subtasks
- prepare progress reports – internal and on deliverables

Task2: Development of a geometry toolkit

- allow the description of complex geometrical shapes, materials and sensitive detectors
- provide interfaces to full simulation programs (Geant4), fast simulations, visualization tools and reconstruction algorithms
- allow for the misalignment of detector components
- provide an interface to calibration constants and conditions data

Task3: Development of generic reconstruction tools

- tracking toolkit based on best practice tracking and pattern recognition algorithms
- provide alignment tools
- allow for pile up of hadronic events
- calorimeter reconstruction toolkit for highly granular calorimeters based on Particle Flow algorithms

Participants: CERN, DESY, HEPY-Vienna, LLR, UCAM, RAL, UGLA

Contained now also some sLHC.

WP and partner list mainly fixed.

WP3: Network for micro-electronics and interconnection technology

Objectives:

Activity type COORD

the main objective of the task is to establish a network of groups working collaboratively on advanced semiconductor technologies and high density interconnection processes for applications in High Energy Physics.

Task1: Coordination of Work package

Task 2: 3D Interconnection:

- Creation and coordination of a framework to make 3D interconnection technology available for HEP detectors
- Organisation of dedicated fabrication of sensors and electronics optimized for 3D interconnection
- Construction of demonstrator detectors using 3D technology to access this technology

Task 3: Shareable IP Blocks for HEP

- Creation and coordination of a framework for the design of low and medium complexity microelectronics libraries and blocks in advanced submicron technologies to be made available to the community of users in HEP
- Organization of the design and qualification of a set of blocks using selected and qualified technologies
- Distribution and documentation of the library of functional blocks
- Organization of regular Microelectronics Users Group meetings to exchange information, plan and coordinate actions related to the creation of a shared library of macro blocks.

Participants: AGH, CERN, CEA, CNRS, CPAN, INFN, MPG

almost ready, might need tuning on budget

WP4: Relation with industry

Activity type COORD

Objectives

Overall goal: address for the “our” projects – sLHC, ILC/CLIC, Neutrino Det., SuperB

- Technology needs, specifications, trends in several area (5-10 years perspective)
- Interactions with industry in development phase and during (large scale) constructions phase
- Transfer to industry, industry related spin-off, and collaboration and co-development with other fields where this is relevant.

Create WEB overview and report covering in a matrix key technologies and specifications (x-axis) versus the four projects mentioned (y-axis).

Industry can link to these nodes describing their capacities.

To be maintained longer term by the CERN TTnet.

Participants: STFC, Oslo, CERN, Helsinki, INFN, CNRS, Athens, ..

WP and partner list mainly fixed.

WP5, 6, 7: Transnational Access

Essentially an amount of money to help people in needs in accessing to

WP5: DESY facilities ready

WP6: CERN facilities ready

WP7: EU irradiation facilities

Need to write WP and budget...

Will be discussed with EU coordinators at Brussels
next Thursday 12/11/09

WP8: Improvement and equipment of irradiation and beam lines

Objectives

Activity type RTD

Task1: Coordination of Work package

Task 2: Test beams at CERN and Frascati

- At CERN: Enlarge particle choice (K0), improve particle identification
Provide LC/CLIC like spill structure
- At Frascati: characterize BTF beam line for electrons and photons
provide and install permanent control and monitoring system for beam position,
width and energy in the BTF beam line

Task 3: Upgrade of proton and neutron irradiation facilities at CERN

- Design splitter magnet
- Equip and test splitter magnet
- Design and test cooling infrastructure for electronics tests

Task 4: Qualification of components and common database

- Review experience from LHC
- Develop common data base for irradiation test results
- Qualify materials and components of detector systems
- Populate and maintain the common database
- Disseminate and publish irradiation results

WP text is mostly ready.
Partner list to be checked
Preliminary budget existing

Task5: Common DAQ infrastructure

Participants: CERN, LNF, UK univ., DESY, CNRS, ULB, LUND, UNIGE

WP9: Advanced infrastructures for detector R&D

Objectives

Activity type RTD

Task1: Coordination of Work package

Task 2: Gas detector facilities
under discussion

(P. Colas, K. Desch)

Task 3: Precision pixel infrastructure
under discussion

(M. Winter +)

Task 4: Granular calorimeter studies infrastructure

(F. Sefkow, H.V.)

A global test beam infrastructure, containing silicon tracker, lumi calorimeter, el-mgn and hadron for specific tests and understanding of the simulation and the particle flow
Under development

Participants: many

Still the most difficult WP.

WP text not yet ready.

(too ?) large partner list to finalized

Budget still not done.

Request by some Institutes on Si Strips community
to modify the tasks...

État des lieux

- Pas mal de WP's (WP9) pas encore prêts & récemment changés
- Meeting pour les contacts nationaux le 9 novembre (hier)
 - Encore beaucoup d'incertitude
- Prochaines étapes:
 - *October 6th : National contact meeting*
 - *October 26th : Contents of WP finalized, first draft of WP text & partners list Preliminary budget breakdown for each WP*
 - *November 9th : Finalized list of partner in each WP Iteration on budget sharing National Contact texts*
 - *November 23th : All WP contributions finalized*
 - *December 1st : Proposal submission*
- Beaucoup de travail encore en ≤ 1 mois

7,3	Facility 3	
	Improvement and equipment of irradiation and beam lines	E.Gschwendtner
8.1	Coordination of work package	H. Taureg
8,1	Test beams at CERN and Frascati	
8,2	Upgrade of proton and neutron irradiation facilities at CERN	
8,3	Qualification of components and common database	
8,4	General beam and irradiation lines equipment	
8,5	Common DAQ infrastructure for combined test beams	
	Advanced Infrastructure for detector R&D	H. Videau
9.1	Coordination of work package	M. Vos
9,2	Gas detector facilities	
9,3	Precision pixel infrastructure	
9,4	Granular calorimeter studies infrastructure	

November 9th : Finalized list of partner in each WP ← Not yet
 Iteration on budget sharing ← Not started
 National Contact texts ← by next week
 Second meeting with national contact
 ~ 2 weeks

Pendant ce temps, en France....

A remplir pour le 16 novembre

Country:		
Short name of participant:		Full name of participant:
Description of participant: <ul style="list-style-type: none">DESCRIBE CONSORTIUM AND INSTITUTE SKILLS TO PARTICIPATE TO AIDA WP. IF SINGLE INSTITUTE SHOULD FIT IN 10 LINES IF CONSORTIUM ~5 LINES PER INSTITUTE		
Tasks in AIDA <ul style="list-style-type: none">TASK NUMBER IN EACH WP.		
Short CV for the key persons: MAX ONE CV PER INSTITUTE + NATIONAL CONTACT 4 LINES / CV		

Remboursements

- Taux de remboursement MAXIMUM par activité

- NA are limited to (direct cost)* 1.07
- JRA are limited to 75 % of (direct cost and full overhead) rate

Activity	Rate
MGT (WP1)	< 50 %
NA/COORD (WP 2,3,4)	30 %
TA (WP 5,6,7)	≥ 75 %
JRA(RTD) (WP 8,9)	30 %

- This is our choice in AIDA to fund JRA and NA is same way

(direct + indirect costs)*0.3 (have to be < max allowed)

- Overhead Personel & Materiels:

CNRS =	60% & 60%
CEA =	60% & 0%

Remboursement (2)

- Exemples (CNRS à 60/60)
 - **Normal**: ensemble des dépenses directes du projet (Mat, pers perm, missions) → 48% [$160\% \times 30\%$] pris en charge
 - **Inverse**: pour obtenir 10k€,
il faut un total de 33k€ (10/30%) (toutes dépenses + OH)
soit 20.6k€ (33k€/160%) de **dépenses directes**,
partagés en 10.6k€ de coût directs engagés (personnel permanent)
et les 10.0k€ obtenus de l'Europe (pour les CDD, missions, etc.)
 - **Equivalent**: 1 ppm post-doc (~5k€) → engagement en salaire de personnel permanent de 1.08 (52%/48%) fois celui du post-doc.
- La limite est *très vite* atteinte avec du personnel permanent
 - → limiter au personnel CNRS
 - → limiter au nécessaire (⚠ feuilles de temps mensuelle ⚠)
- **ATTENTION:**
 - **Aux ponctions universitaires & administratives → V DR pour les taux (0–15%)**
 - **Achat de matériel non-amortis à la fin du contrat (rmbt quote-part)**

Bref...

- À vos calculettes
 - la période des négociations va commencer
- Vous allez recevoir des documents à remplir
 - CV
 - Liste des personnels & salaires correspondants
- N'hésitez pas à me contacter en cas de doute
 - et votre DR en cas de doute sur les chiffres (salaires, prélèvements)
- Cédric Bosaro de la cellule Europe de l'IN2P3.
- <https://espace.cern.ch/aida/default.aspx>

BON COURAGE...