

*“European Nuclear Science and  
Applications Research 2”*

**(ENSAR2)**

**Muhsin N. Harakeh**

**Coordinator ENSAR**

*on behalf of the*

*ENSAR management group and ENSAR2 SSC*

**NUSTAR Week**

**22-26 September 2014**

**Valencia, Spain**

# Partners of



**7 TNA Facilities**

**30 beneficiaries**  
**18 countries**

**53 associated partners**

**EC financial contribution: 8 M€**

# ENSAR & ENSAR2

- **ENSAR started on September 1, 2010**
- **End of the ENSAR project December 31, 2014  
(after prolongation by 4 months)**
- **Pre-proposal for ENSAR2 as response to the EC consultation by October 2012**
- **In February 2013, ENSAR2 came on the short list of the EC to be targeted for a call.**

**We asked the community to help in the preparation of the ENSAR2 proposal (in particular suggestions for NAs and JRAs).**

# Preparation of FP8 ENSAR2

- **Creation of the Scientific Steering Committee with representatives of ENSAR2 TNA facilities and experts of their scientific fields: beginning of March 2013**

## **ENSAR Scientific Steering Committee (SSC)**

<b>ENSAR</b>	<b>Muhsin N. Harakeh</b>	<b>Ketel Turzó</b>
<b>CERN/ISOLDE</b>	<b>Maria Borge</b>	<b>Karsten Riisager</b>
<b>CNRS/ALTO</b>	<b>Façal Azaiez</b>	<b>Wolfram Korten</b>
<b>COPIN/IFJ-HIL</b>	<b>Adam Maj</b>	<b>Krzysztof Rusek</b>
<b>ECT*</b>	<b>Wolfram Weise</b>	<b>Paul-Henri Heenen</b>
<b>GANIL</b>	<b>Marek Lewitowicz</b>	<b>Martin Freer</b>
<b>GSI</b>	<b>Jürgen Gerl</b>	<b>Lola Cortina Gil</b>
<b>IFIN-HH</b>	<b>Livius Trache</b>	<b>Norbert Pietralla</b>
<b>INFN/LNL-LNS</b>	<b>Rosa Alba</b>	<b>Suzana Szilner</b>
<b>JYU</b>	<b>Rauno Julin</b>	<b>Rolf-Dietmar Herzberg</b>

# Preparation of FP8 ENSAR2

**Call for new ideas: deadline on April 15, 2013**

**42 new ideas received**

**14 Networks**

**27 Joint Research Activities**

**1 Transnational access to AGATA**

**These do not include 10 TNAs**

**Some of the Networking and Joint Research activities are connected to projects selected by the ERANET-NuPNET: GANAS, NEDENSAA, and FATIMA (R&D on detectors), EMILIE (EURISOL technologies) and SARFEN (nuclear theory)**

# Preparation of FP8 ENSAR2

## Meeting with EC on 22 April & 14 October 2013

- **GSI/FAIR and GANIL/SPIRAL2: TNA within ENSAR2 or construction and running budget as ESFRI RI**
- **New infrastructures from Poland and Romania: Krakow/Warsaw (Cyclotrons) Bucharest (high-energy tandem and ELI-NP)**
- **ECT\*: TNA in Hadron Physics and ENSAR2**
- **AGATA infrastructure**
- **Relations with international infrastructures in Canada, China, Japan, Russia, South Africa and U.S.**

# Preparation of FP8 ENSAR2

- **Preselection of work packages for presentation**
- **Presentation of new ideas during ENSAR Town Meeting, Warsaw, Poland – June 17 to 20, 2013**
- **SSC meeting in Roissy on 10 September**
- **October 2013: ENSAR2 proposal well advanced**
- **Ready for the 1<sup>st</sup> Horizon 2020 call, but future SSC meetings may be necessary for fine-tuning**

**After a 3-step selection process and after discussion with EC officers on 14-10-2013:**

- **10 TNAs**
- **7 JRAs**
- **12 NAs**

**EC financial contribution request: 10 M€**

- ❑ **Transnational Access Activities:  $\leq 50\%$**
- ❑ **Joint Research Activities:  $\geq 35\%$**
- ❑ **Networking Activities:  $\geq 15\%$**



## TNAs

- **GANIL (France)**
- **GSI (Germany)**
- **LNL / LNS (Italy)**
- **JYFL (Finland)**
- **ISOLDE – CERN (Switzerland)**
- **ALTO – CNRS (France)**
- **KVI (The Netherlands)**
- **SLCJ-HIL / IFJ PAN (Poland)**
- **ELI-NP / IFIN-HH (Romania)**
- **ECT\* (Italy)**

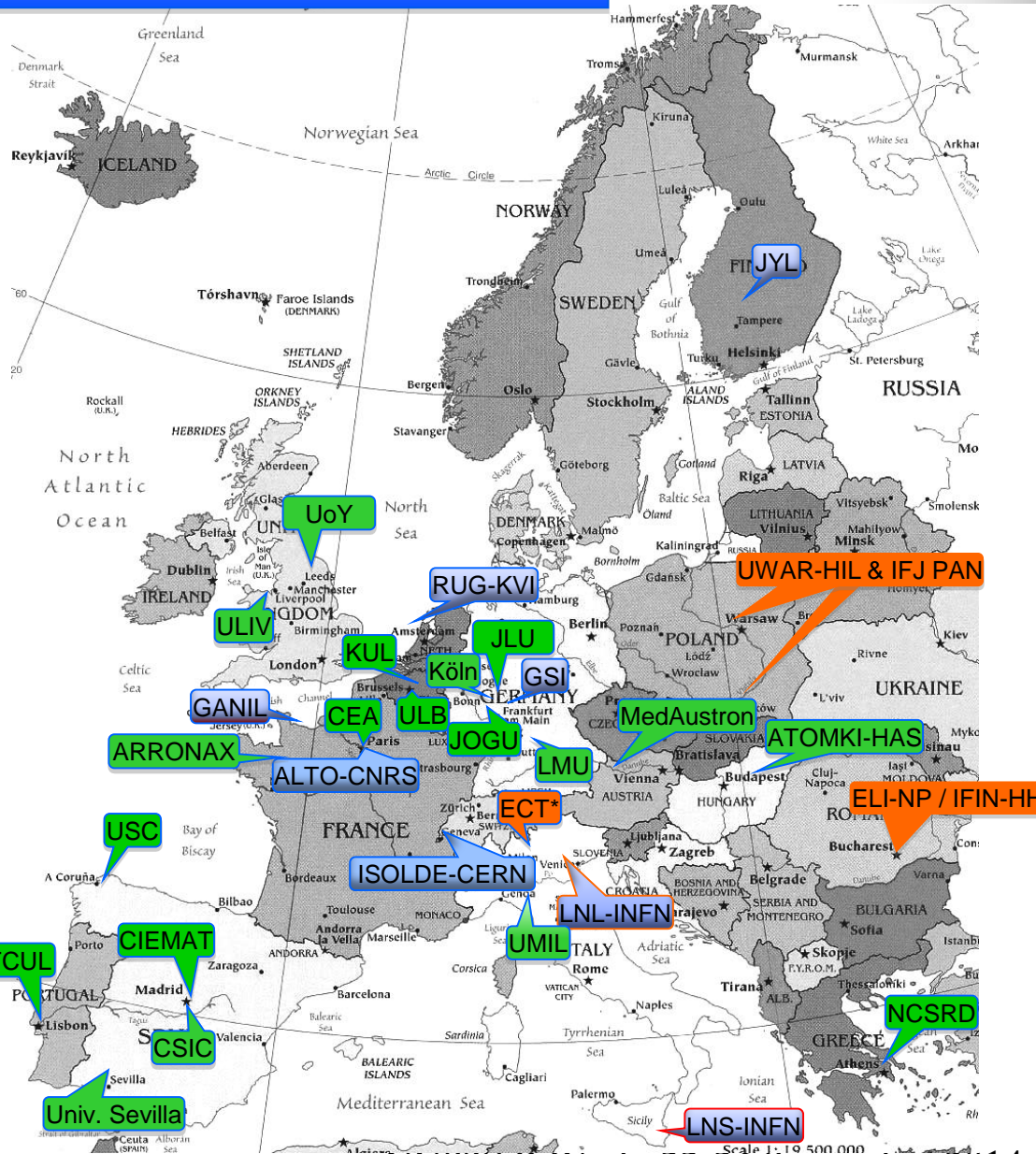
**NEW**  
**NEW**  
**NEW**

## JRAs

- **PASPAG-SEE: Particle and gamma detection**
- **PSeGe: AGATA detector + applications**
- **TheoS: Theory of Nuclear Structure & Reactions**
- **RESIST: Resonant ionisation techniques for separators**
- **SATNuRSE: Simulations and analysis tools**
- **EURISOL facility (all stages)**
- **TecHIBA: Stable ion beams + medical isotopes**

## NAs

- **FISCO: Financial and Scientific COordination NA**
- **ASTARTE: Advancement of radiation therapy detectors**
- **NucApp: Nuclear applications**
- **FULN: Fundamental understanding of light nuclei**
- **ENSAF: Small-scale accelerator facilities**
- **NUSPIN: Nuclear Spectroscopy Instrumentation**
- **GDS: Active targets (TPC gaseous detectors)**
- **MIDAS: ECR ion sources**
- ~~**PREFUNIS: Precision tests of FIS (finally dropped out)**~~
- ~~**GES: Advanced electronics network (finally dropped out)**~~
- **CWG: Nuclear structure, astrophysics and reactions**
- **Ion-Beam Therapy**



7 ⇒ 10 TNA Facilities

30 ⇒ 30 beneficiaries  
15 countries

Community: 2700-3000  
scientists and highly qualified  
engineers

Close collaboration with  
infrastructures outside Europe:  
Canada: TRIUMF  
China: IMP Lanzhou  
Japan: RIKEN & RCNP  
Russia: Dubna/JINR  
South Africa: iThemba  
United States: NSCL & ANL

## Meeting with the new EC liaison officer (18 March 2014):

- ❑ **Prolongation of ENSAR project: 4 months; not to go beyond 2014.**
- ❑ **The Swiss institutes cannot be beneficiaries. The situation may change by June 2014.**
- ❑ **International partners: easier TNA rules; careful not to give money to rich countries (USA, Japan,...).**
- ❑ **Budget: 10 M€ of total budget is strongly recommended.**
- ❑ **Number of beneficiaries: 20 is an optimum but 30 seems to be still acceptable.**
- ❑ **Impact studies: socioeconomic impacts to be done internally.**
- ❑ **Templates published on April 15<sup>th</sup> (finally < 100 pages).**
- ❑ **No negotiation phase: the budget will not be cut if the project is selected.**

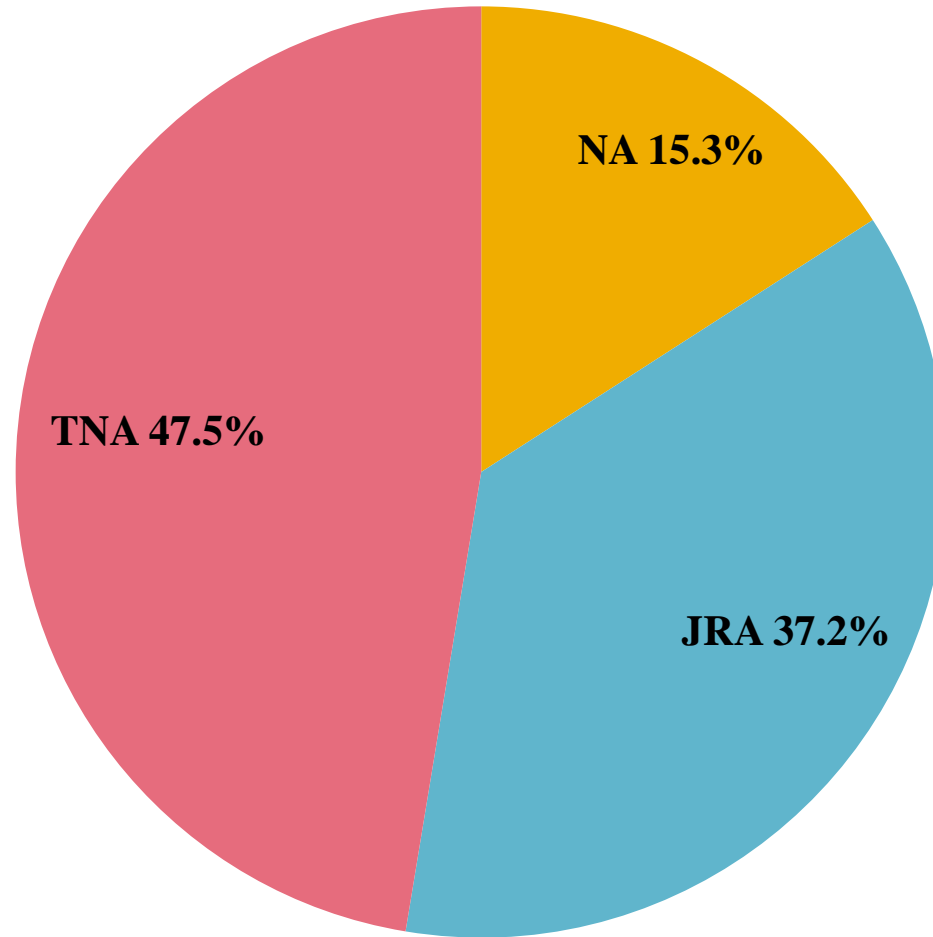
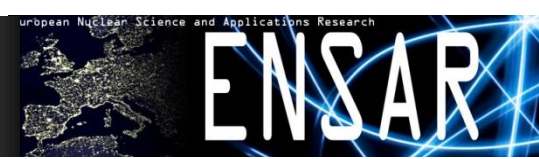
**SSC meeting 10-11 April 2014 at GSI ⇒**

- **Innovation in ENSAR2.**
  - **Links with industry already present in some networks.**
  - **Industrial companies can be associated partners: they are identified in the proposal without being beneficiaries.**
  
- **NEW - Management of data: define standards and procedures to provide raw data (strong links with all TNAs).**
  
- **Reduce number of NAs**

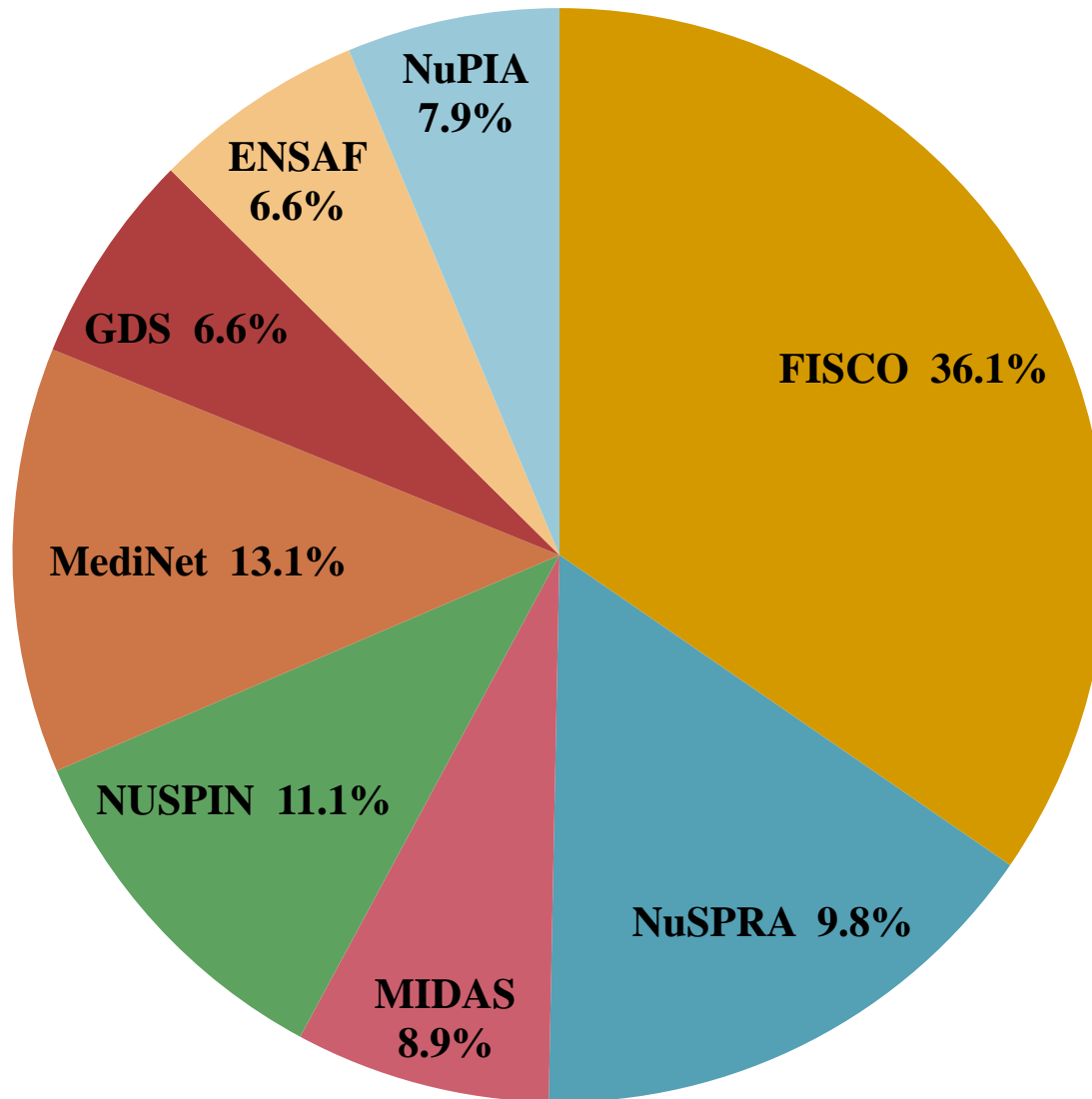
## NAs

- **FISCO: Financial and Scientific COordination NA**
- **NuSPRA + FULN**
- **MIDAS: ECR ion sources**
- **NUSPIN: Nuclear Spectroscopy Instrumentation**
- **MediNet (ASTARTE+ Ion-Beam Therapy)**
- **GDS: Active targets (TPC gaseous detectors)+ GES**
- **ENSAF: Small-scale accelerator facilities**
- **NuPIA: Nuclear Physics Innovation**

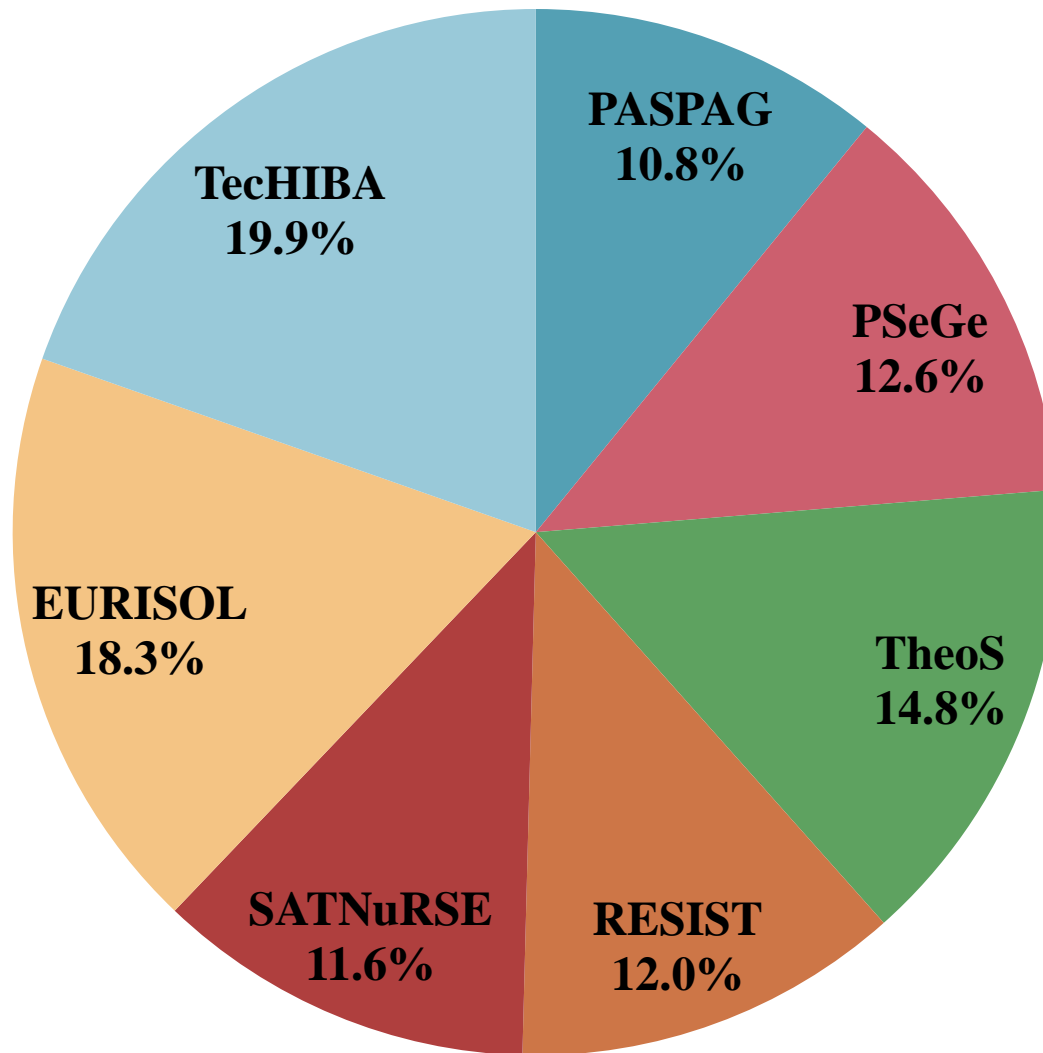
# ENSAR2 - Total budget



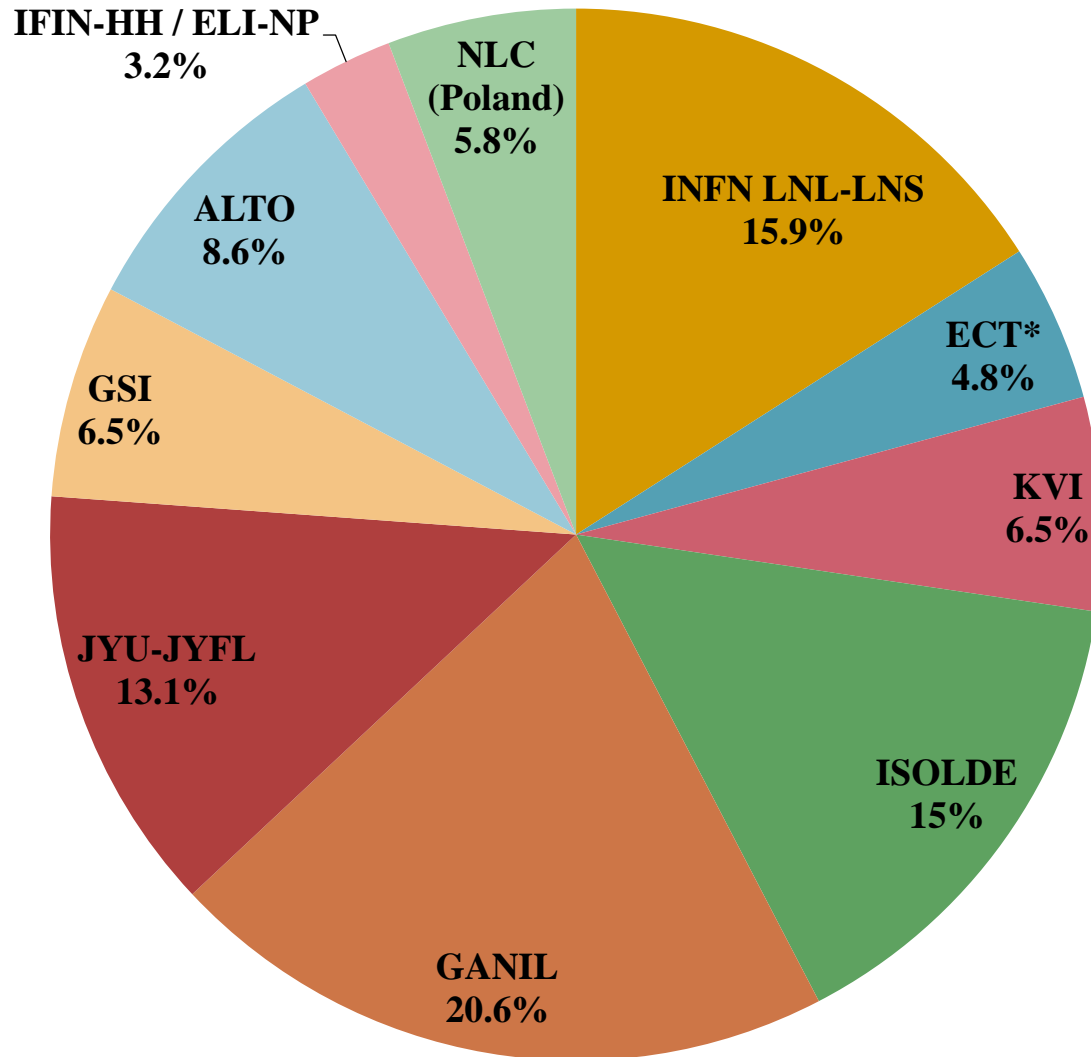
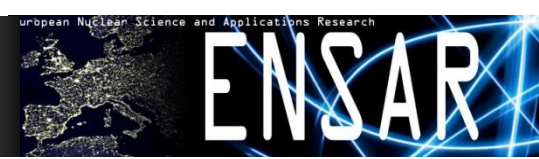




# JRAs



# TNAs



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# Budget NAs



<b>WP</b>	<b>Coordinating institution</b>	<b>Budget k€</b>
<b>FISCO</b>	<b>GANIL</b>	<b>550</b>
<b>NuSPRA</b>	<b>GSI</b>	<b>150</b>
<b>MIDAS</b>	<b>JYU</b>	<b>135</b>
<b>NUSPIN</b>	<b>INFN</b>	<b>170</b>
<b>MediNet</b>	<b>LMU</b>	<b>200</b>
<b>GDS</b>	<b>GANIL</b>	<b>100</b>
<b>ENSAF</b>	<b>NCSR</b>	<b>100</b>
<b>NuPIA</b>	<b>GANIL</b>	<b>120</b>
	<b>Total</b>	<b>1525 k€</b>

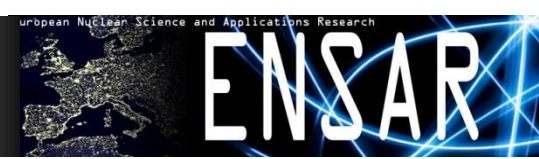
# Budget JRAs



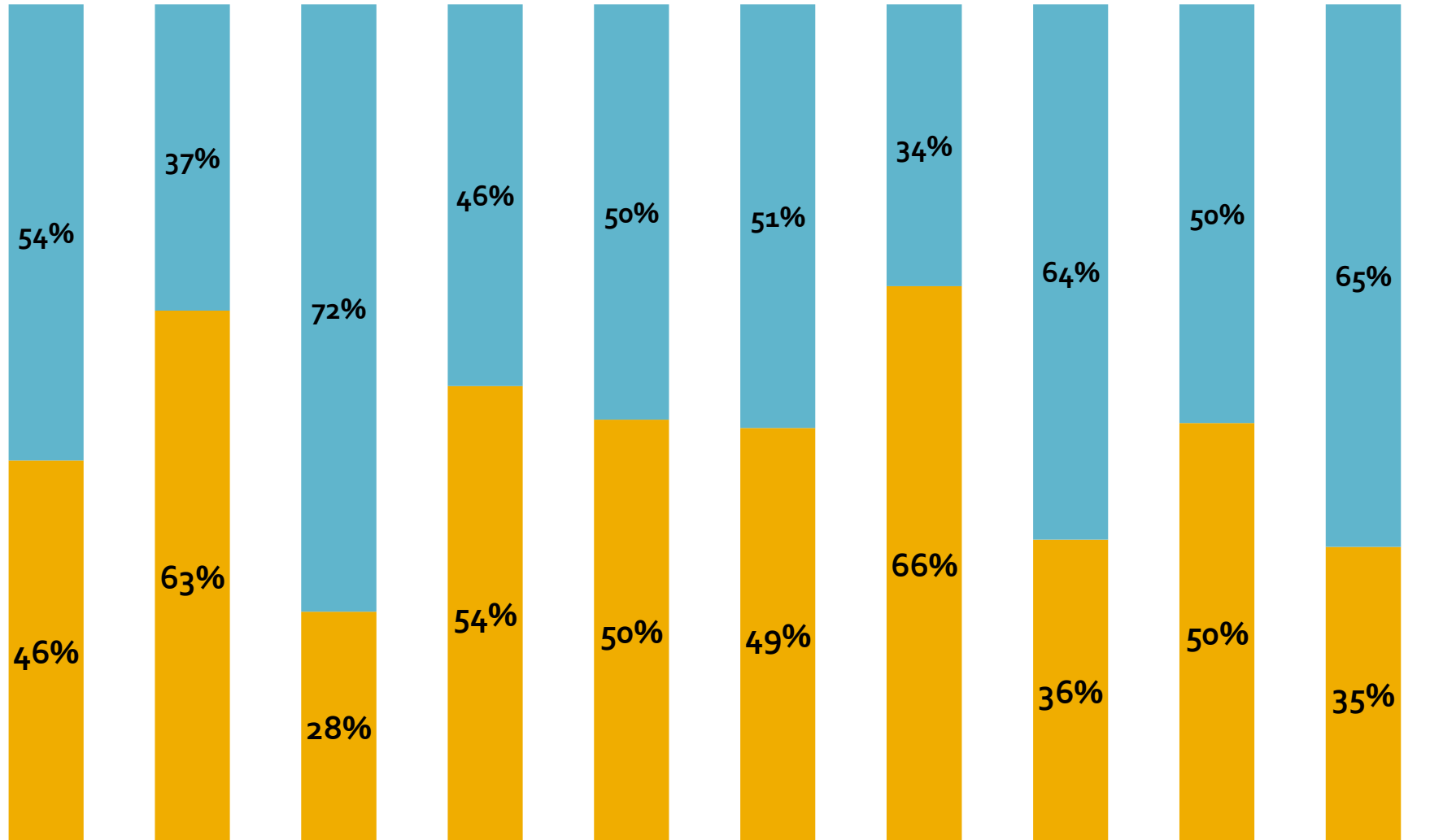
<b>WP</b>	<b>Coordinating institution</b>	<b>Budget k€</b>
<b>PASPAG</b>	<b>IEM-CSIC</b>	<b>400</b>
<b>PSeGe</b>	<b>IFIC</b>	<b>470</b>
<b>TheoS</b>	<b>CNRS</b>	<b>550</b>
<b>RESIST</b>	<b>JYU</b>	<b>448</b>
<b>SATNuRSE</b>	<b>RUG</b>	<b>430</b>
<b>EURISOL</b>	<b>CNRS</b>	<b>680</b>
<b>TecHIBA</b>	<b>CNRS</b>	<b>740</b>
	<b>Total</b>	<b>3718 k€</b>

<b>WP</b>	<b>Coordinating institution</b>	<b>Budget k€</b>
<b>INFN LNL-LNS</b>	<b>INFN</b>	<b>756</b>
<b>ECT*</b>	<b>FBK</b>	<b>229</b>
<b>KVI</b>	<b>RUG</b>	<b>311</b>
<b>ISOLDE</b>	<b>CERN</b>	<b>712</b>
<b>GANIL</b>	<b>GANIL</b>	<b>979</b>
<b>JYU-JYFL</b>	<b>JYU</b>	<b>623</b>
<b>GSI</b>	<b>GSI</b>	<b>311</b>
<b>ALTO</b>	<b>CNRS</b>	<b>411</b>
<b>IFIN-HH / ELI-NP</b>	<b>IFIN-HH</b>	<b>150</b>
<b>NLC (Poland)</b>	<b>UWAR, IFJ PAN</b>	<b>275</b>
	<b>Total</b>	<b>4757 k€</b>

# Budget allocation - TNA



■ T&S + indirect cost / Requested grant   ■ Access cost / Requested grant



INFN

ECT

RUG

CERN

GANIL

JYU

GSI

CNRS

IFIN-ELI

UWAR, IFJ PAN

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# Project Call



- **Call 2 - H2020-INFRAIA-2014/2015 Integrating and opening existing national and regional research infrastructures of pan-European interest**

*Physical Sciences - Advanced Communities*

**Research infrastructures for nuclear physics.**

## **ENSAR2**

- **Open and interconnected science and engineering for academia and industry.**
- **Improvement of access, of cooperation, and of services.**

**Monday & Tuesday (16-17 June 2014) last SSC meeting in Roissy.**

**1<sup>st</sup> Horizon 2020 call: ENSAR2 submitted on deadline 2 September 2014**



*Thank you for your attention*