Early Recognition, Monitoring and Integrated Management of Emerging, New Technology Related, Risks
iNTeg-Risk
Grant agreement number: CP-IP 213345-2

iNTeg-Risk: Early Recognition, Monitoring and Integrated Management of Emerging, New Technology Related Risks

iNTeg-Risk Kom Meeting

iNTeg Risk KOM, Bruxelles 2-3/12/08
SP3 Presentation

F. Bagnoli, D'Appolonia S.p.A
Gy. Lenkey, Bay Zoltán Foundation (BZF)

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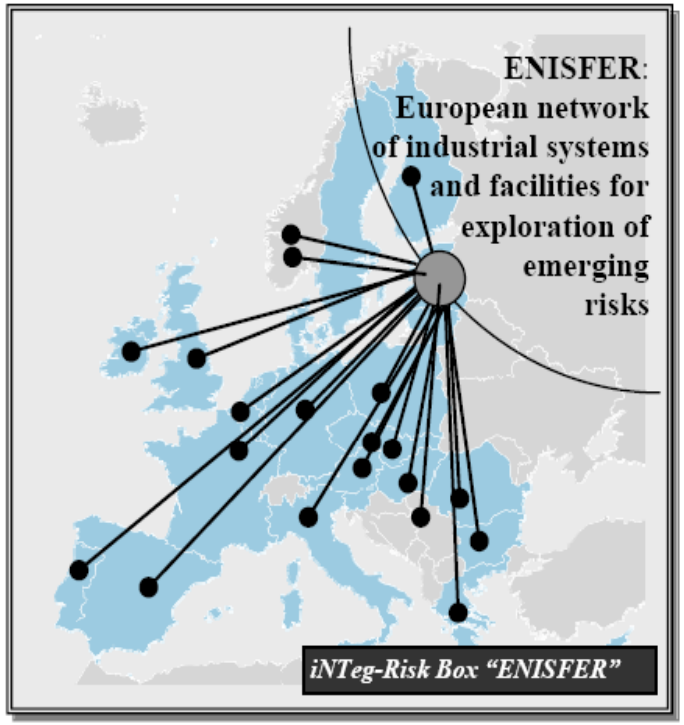
- Focus on iNTeg-Risk SP 3 ENISFER
- Subproject 3: Detailed work description
- Leader Partners in SP3: D'Appolonia S.p.A. & BZF

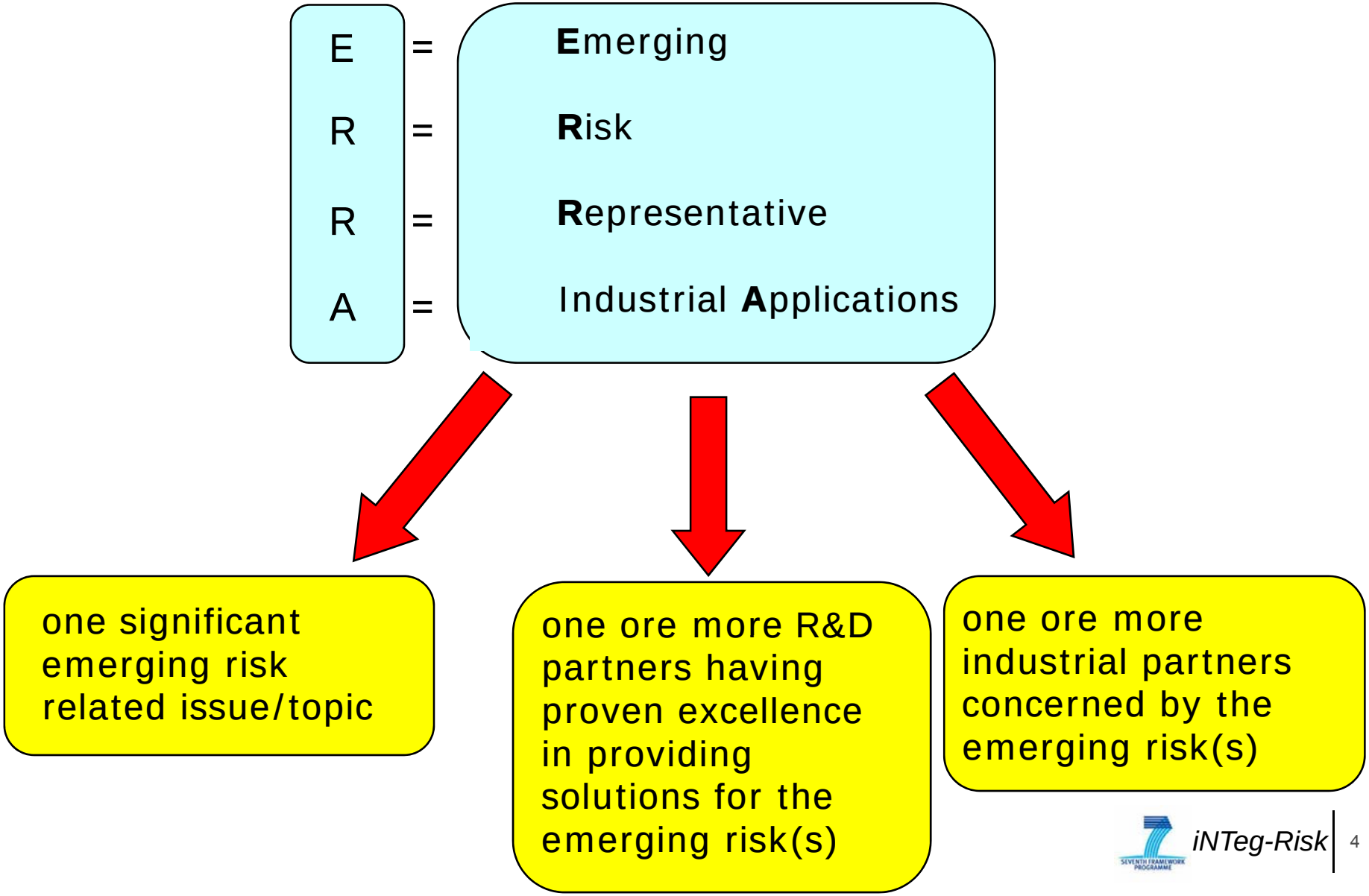
Focus on iNTeg-Risk SP 3 ENISFER: The “ENISFER” Acronym

E	=	**E**uropean
N	=	**N**etwork
I	=	of **I**ndustrial
S	=	**S**ystems
F	=	and **F**acilities
E	=	for exploration of **E**merging
R	=	**R**isk



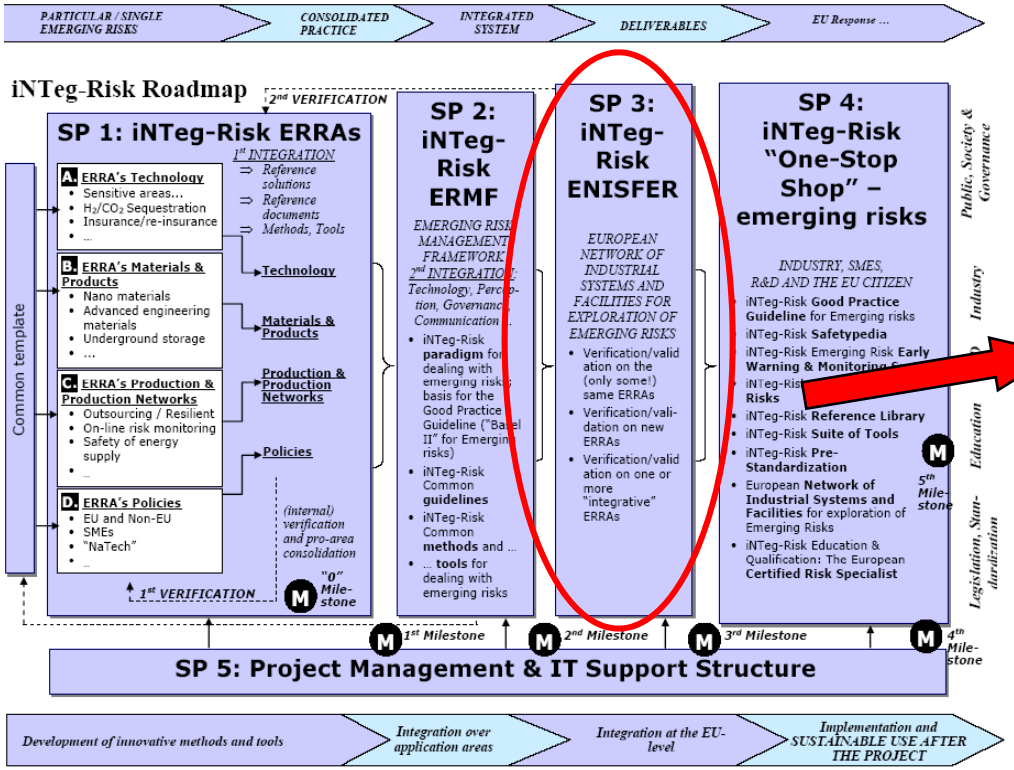
SP3 will provide the basis for the European Network of Industrial Systems and Facilities for exploration of Emerging Risk to be finalised in SP4 and launched within Integ-Risk as one of the main objectives of the whole project

Focus on iNTeg-Risk SP 3 ENISFER: The “ERRA” Acronym



Focus on iNTeg-Risk SP 3 ENISFER

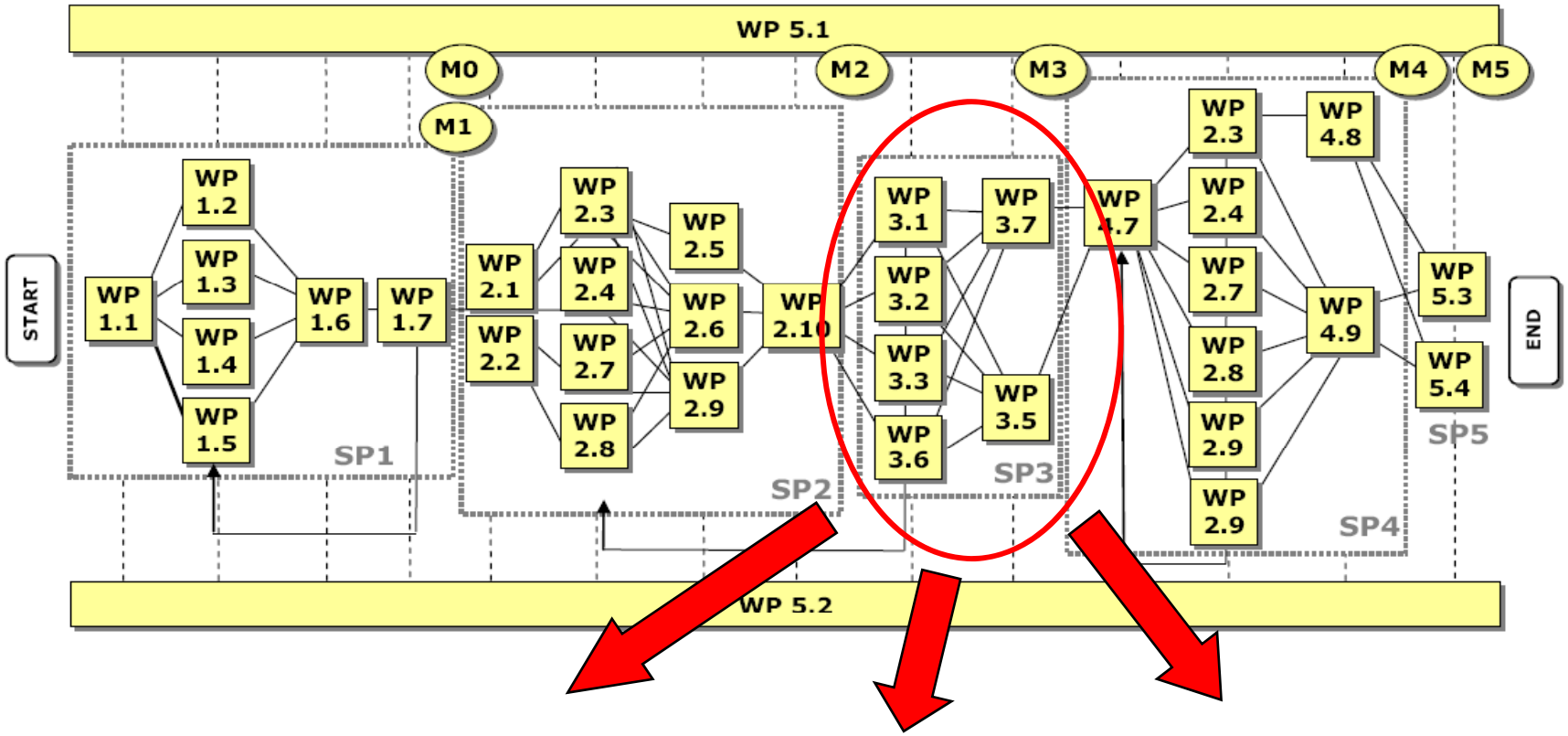
At the end of SP2 the new methods, models and tools are available, and integrated within the Integ-Risk Framework
Aim of SP3 is to demonstrate that the Integ-Risk framework, starting form the evlauated ERRAs, is applicaple and valid to any industrial scenario



SP 3: iNTeg-Risk ENISFER

- Verification/validation on the methods developed in SP2 on the ERRAa defined in SP1
- Verification/validation on new ERRAs
- Verification/validation on one or more integrated scenario

Focus on iNTeg-Risk SP 3 ENISFER: Work packages



Validation criteria and indicators for the methods and tool implemented for the ERRAs

Setting up benchmarks

Feedback from case studies

Collection of data about ERRA (experimental, simulated, etc.) to be included into specific database

Demonstration of the developed concepts. Evaluation of standardization issues

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Subproject 3: Work description

Subproject 3 combines the issues defoned in SP1 with the solutions from SP2 in terms of application, **validation** and verification

Validation of the selected ERRAs will be organized including participation of number of iNTeg-Risk partners and it will cover:

- organisational factors and framework
- human barriers (with particular focus to outsourced activities)
- simulation of scenarios
- definition and evaluation of specific vulnerabilities

Subproject 3: Detailed work description

Subproject 3 combines the issues defined in SP1 with the solutions from SP2 in terms of application, validation and **verification**

The ERRAs planned for verifcation are those more related to:

- insurance and reinsurance aspects of emerging risks on new technologies
- onshore oil extraction in sensitive areas, renewable energies, and LNG regasification technologies
- production, storage and transport of nano-materials on industrial scale at SMEs
- On-line risk-monitoring and assessment of emerging risks in conventional industrial plants
- validation on a new ERRA related to health effects in medical industry

Workplan

- WP3.1: Validation using the ERRAs
  - T3.1.1: Insurance and re-insurance aspects of emerging risks on NEW technologies to iNTeg-Risk examples (Swiss Re)
  - T3.1.2: Extended A3: Verification example on automated aerial pipeline surveillance (GDF)
  - T3.1.3: Extended A4: Innovative LNG re-gasification technologies (UNIPD(CONPRICI))
  - T3.1.4: B1: Production, storage and transport of nano-materials on industrial scale at SMEs - NEW SME to be involved (Swiss Re)
  - T3.1.5: C1: Challenges to safety posed by outsourcing of critical tasks – Validationexample (EDF)
  - T3.1.6: C3: On-line risk-monitoring and assessment of emerging risks in conventional industrial plants - monitoring of risks beyond the design/regulatory basis (NIS)
  - T3.1.7: D2: Case studies of Integrated Risk Management Framework in several SMEs (TUKE)
  - T3.1.8: D4: Validation on a new ERRA related to health effects in medical device industry and application of nature-inspired systems (Novineon)
  - T3.1.9: Competition for NEW ERRAs, assigned to Nano Technology, competition will be launched for the most attractive implementation (EU-VRi)

WP3.2

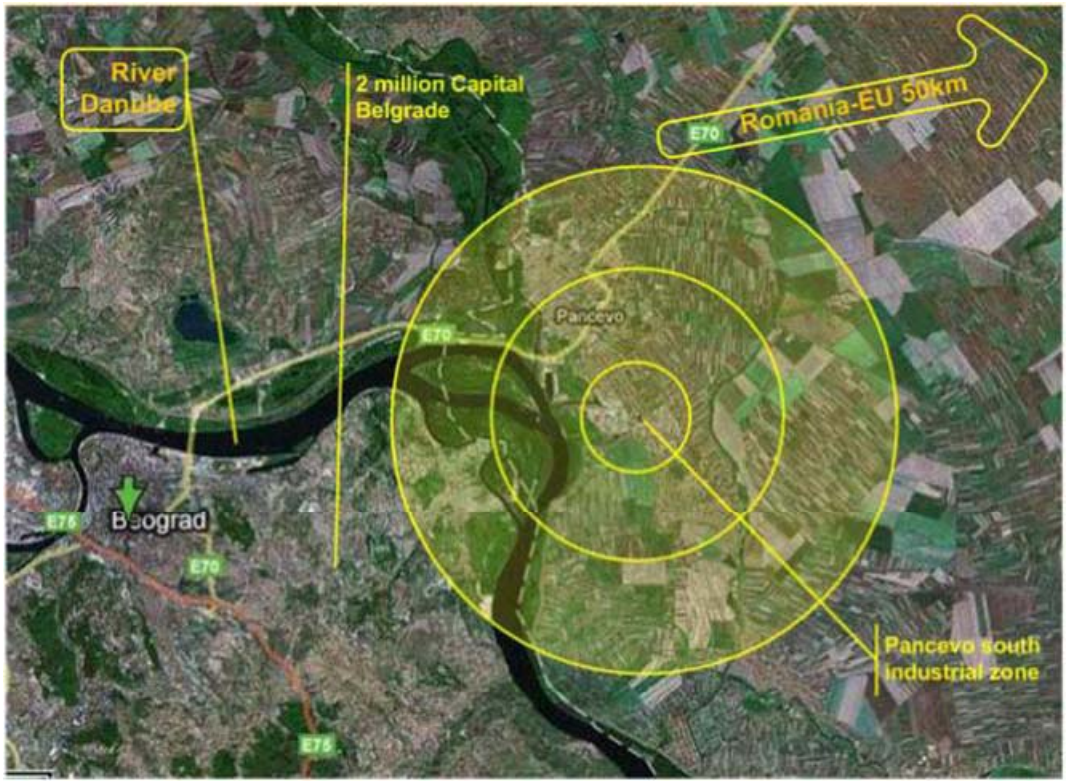
- I1: Integrative ERRA #1 for the validation of emerging risk assessment and management tools in the area of Mantova (POLIMI (CONPRICI))
- **Objective:** Extended validation of iNTeg-Risk methods and tools developed in SP1 and SP2, with specific reference to that related to ERRA D3 (*Emerging risk related to interaction between natural hazards and new technologies at a community level), ERRA D1 (Definition of KPIs emerging risk in oil and gas (upstream), petrochemical (downstream) and power industries, including CSR aspects of emerging risks), and ERRA C4 (Atypical, one-of-the-kind major hazard/scenarios (post-Buncefield implications) and their inclusion in the normal HSSE practice) in an area where important industrial* activities, natural hazards, large population density and a relevant cultural heritage are present

WP3.3

- Integrative ERRA #2: Harbor zone of Luka Koper (JSI)
- Objectives: Extended validation of methods and tools developed in SP1 and SP2, with specific reference to multi-technology aspects, interconnected and multiple transportation networks and storage facilities.

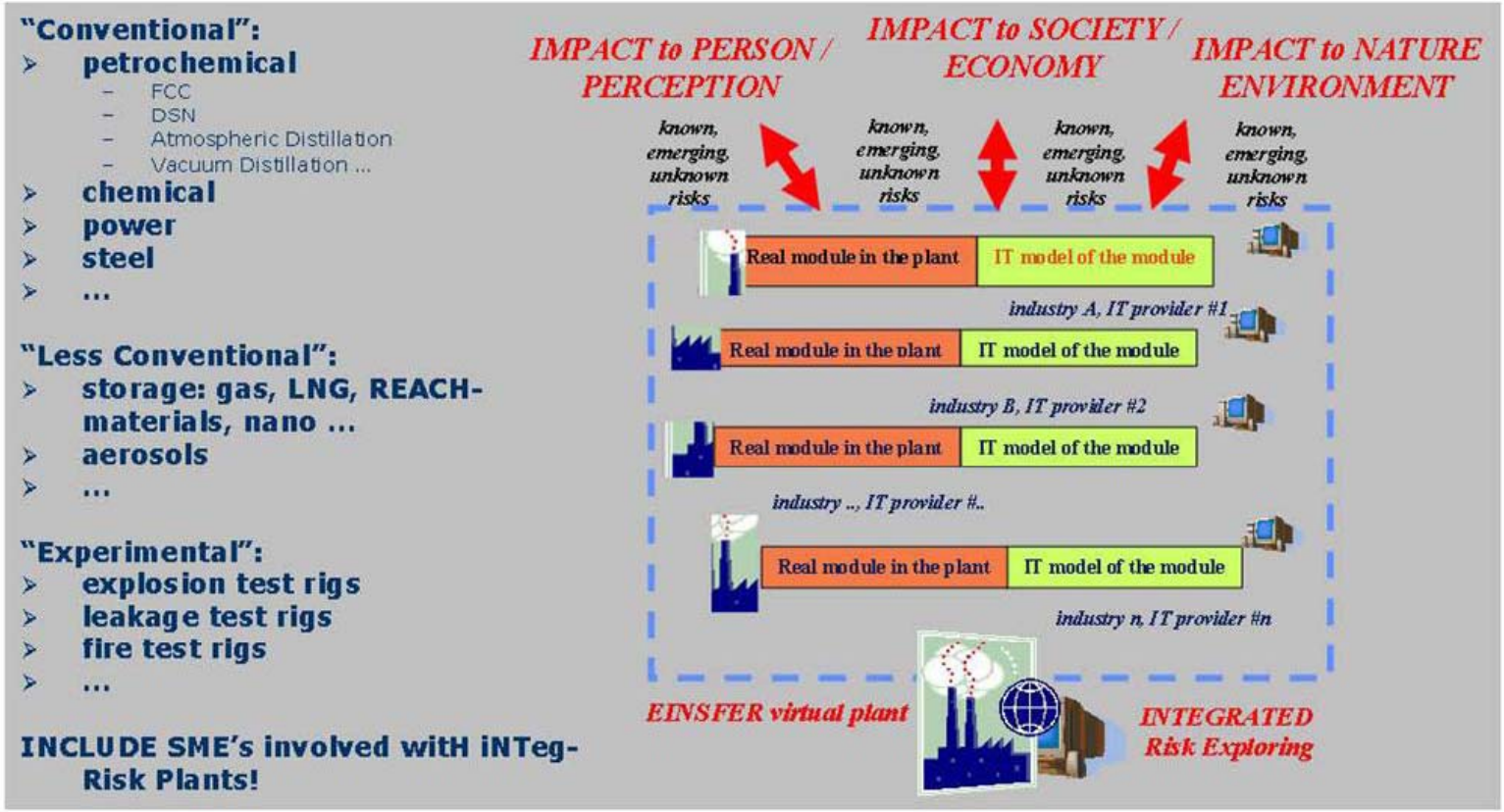
WP3.4.

- Integrative ERRA #3: Industrial zone of Pančevo-South (NIS)
- Objectives: To set up the ERMF onto a complex scheme, i.e. industrial zone involving chemical and petrochemical plants and situated near large city.



WP3.5.

- Convert the ERRAs in a network of virtual reference facilities (ENISFER) – (EU-Vri)
- Objectives: Provide a “catalogue” of European reference facilities for integration of emerging risks both the experimental and industrial ones and coordinate use and further development of these facilities on the European level



WP3.6.

- Verification/validation of simple models (R-Tech)
- Objective: Identification, further development and validation of sub-models needed for the assessment of specific emerging risks.
  - T3.6.1: Verification of nano - storage/explosion models on experimental facilities (BAM)
  - T3.6.2: Sample in-silica applications to large underground coal storage (VTT)
  - T3.6.3: Full scale verification of the multiple explosion models on the past events in a large refinery plant (NIS)
  - T3.6.4: Modeling the system for Third Party Interference (TU Crete)

WP3.7.

- Interactions with One-stop-shop and the ERMF (D'Appolonia)
- Objective: The aim of this WP is the specification of the interaction between the iNTeg-Risk Management Framework with the one-stopshop.

Participants and efforts

- In SP3: 36 partners:
  - 11 Industrial Partners (MOL, NIS , EDF, GDF, Enagas, Saipem)
  - 8 Research Organizations
  - 11 Universities
  - 6 Other partners
- Total person months: 312 PM
- Start date: month 24
- End date: month 50
- 33 deliverables:
  - 4 „products” (i.e. database, tool)
  - 29 documents, reports

Interdependences and interactions with other SPs

- Input from SP1 and SP2: success of SP3 strongly depend on the result of SP1 and SP2
- Assessment and adaptation of the results of SP1 and SP2 will have to be done at the beginning os SP3
- Within SP3:
  - Input from WP1, WP2, WP3, WP4 and WP6 to WP5 and WP7
- Input for SP4:
  - learn from application experiences (good practices)
  - continuous communication and interaction with SP4 will be necessary (running paralllel)

Management aspects

- Kick-off meeting is planned: at the end of year 2 (month 23), or at the beginning of year 3 (month 24)
- Planning details of the different tasks should be evenly developed by that time, according to the results so far achieved in SP1 and SP2
- Quality assurance procedure will be developed: for SP3
  - Guideline for the validation cases (presentation of the results and outputs)
  - Specific templates
- The two SP leaders will share the coordination work (i.e. control of the WPs)

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Leader partners in SP3: BZF & D'Appolonia

Subproject 3 coordinator: lead R&D partner for ERRA on on-line emerging risk monitoring

Industry leader for SP3: Integrator for the area of LNG-related ERRA, methods and tools implementation

Representatives of BZF

- Dr. Gyöngyvér B. Lenkey:
  - Institute director
  - Experiences in risk based methodologies
- Péter Rózsahegyi:
  - Head of Technical Risk Management Department

- BZF is one of the founding members of EU-VRi

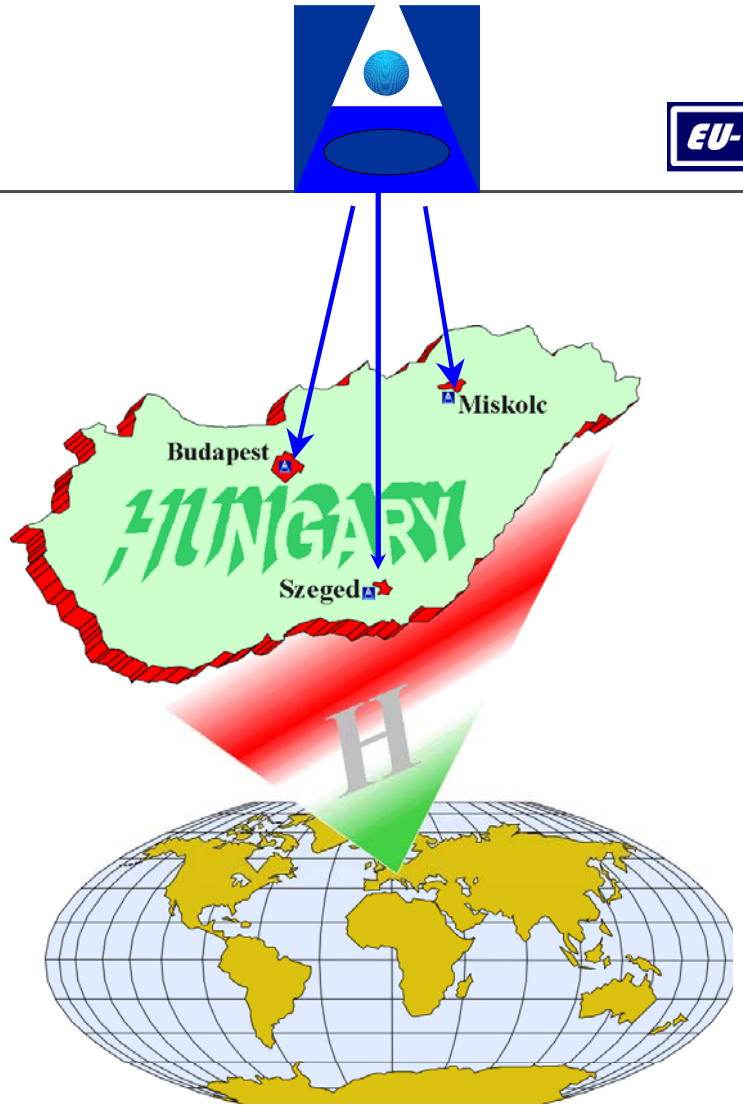
Bay Zoltán Foundation for Applied Research (BZF)

History:

- Establishment of the foundation: 1993
- Founder: government - OMFB (National Grant Agency for Technological Development)
- Non-profit, but not state financed!
- Mission:
  - Applied R&D for industry
  - Co-operation with the universities and academic research institutes
  - Training PhD students
- App. 200 employees – in 6 institutes

Institutes

- Institute for Materials Science and Technology (BAY-ATI) - 1995
- Institute for Logistics and Production Systems (BAY-LOGI) -1993
- Institute for Biotechnology (BAY-BIO) - 1993
- Institute for Applied Telecommunication Technologies (BAY-IKTI-Budapest) -2004
- Institute for Nanotechnology (BAY-NANO - Miskolc) - 2007
- Institute for Plant Genomics, Human Biotechnology and Bioenergy (BAY-GEN - Szeged) - 2008



Sources of income

- International co-operation projects (applications)
- National research projects funded by the ministries (applications)
- Industry (SMEs, large-scale companies, multinational companies)
- Public institutions (local government, ministries)

Institute for Logistics and Production Systems (BAY-LOGI)

BAY-LOGI

MISKOLC

Established:

December 1993.

Departments at BAY-LOGI

- Department for Informatics
- Department for Environmental Management and Logistics
- Department for Structural Integrity
- Department for Project Management
- Department for Mechatronics
- Department for Technical Risk Management
- Department for Energy

60 employees and PhD students

App. 80 projects in 2008

Contact details

- Address:

3519 Miskolc, Iglói u. 2.

Hungary

- URL:

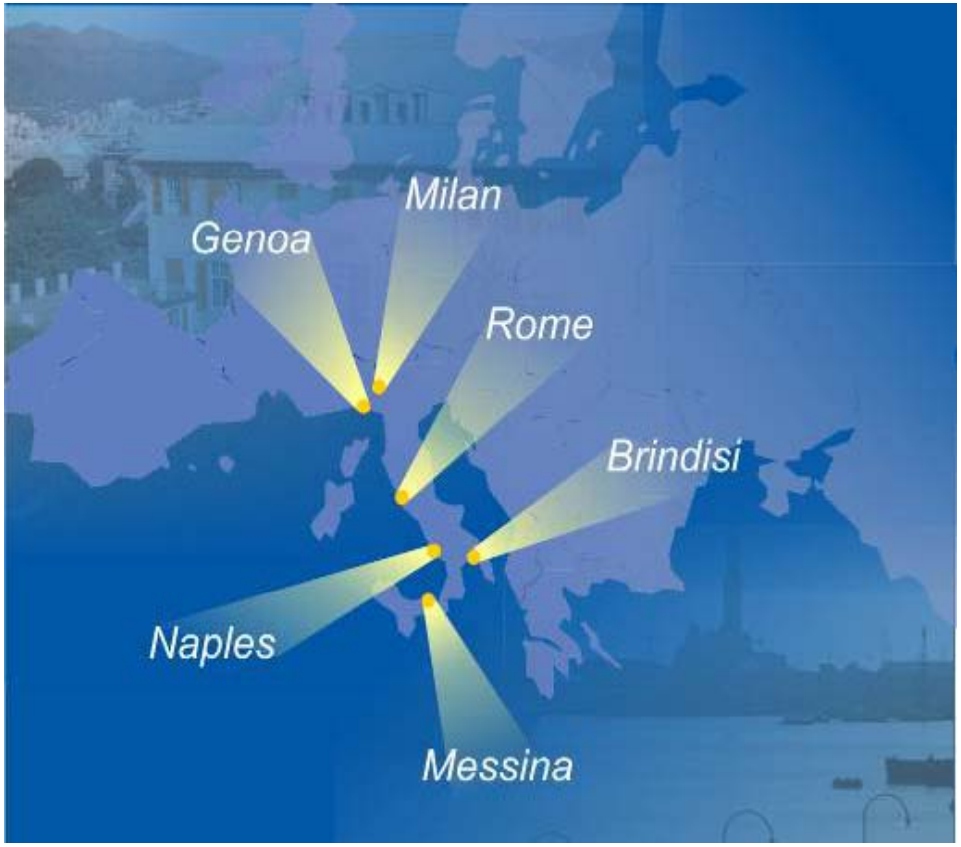
www. bayzoltan.org

- e-mail:

gyongyver.lenkey@bay-logi.hu

BAY-LOGI

D'APPOLONIA COMPANY OFFICES



Abroad offices:

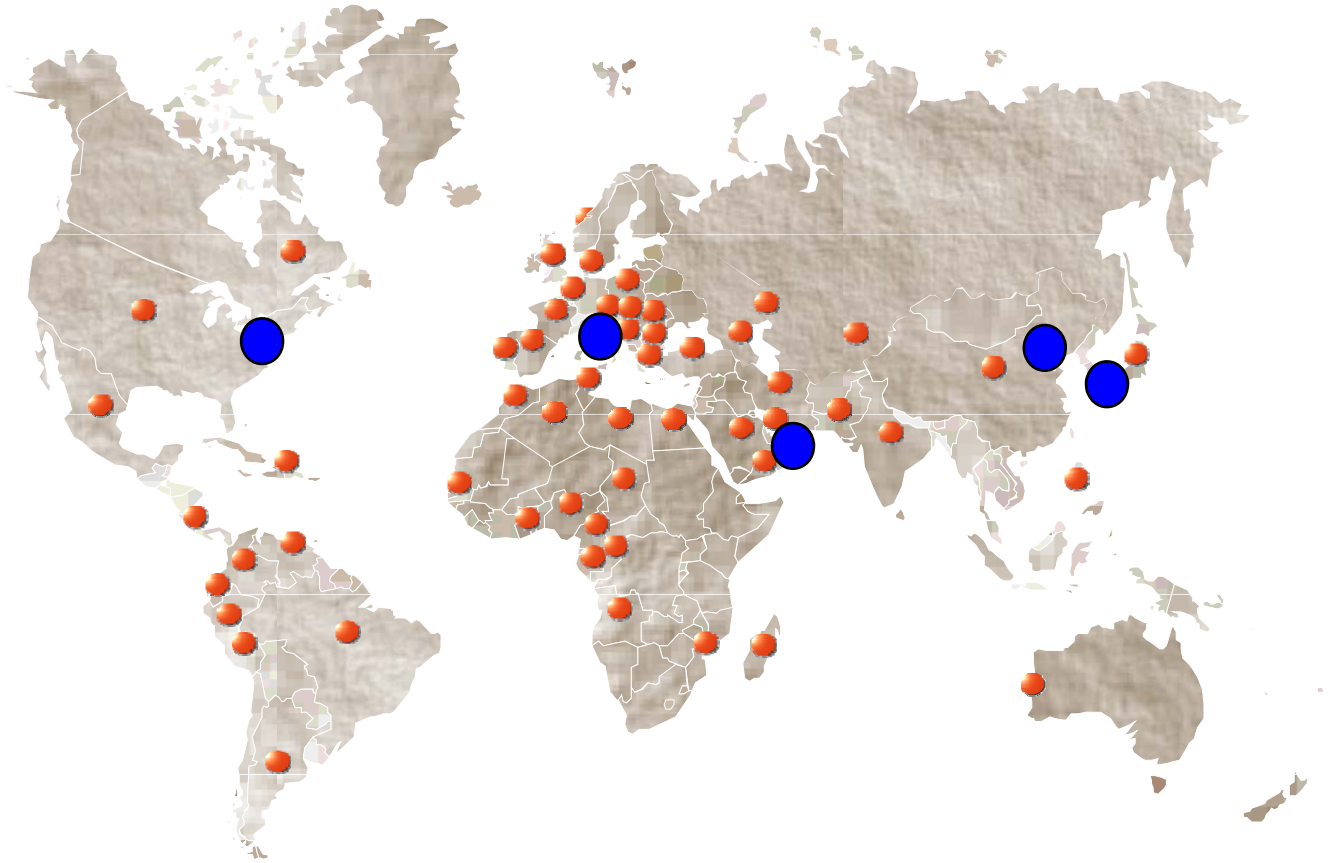
- Beijing (China)
- Seoul (Korea)
- Abu Dhabi (United Arab Emirates)

D'Appolonia mission is to provide engineering consulting and design services to government and industry on the basis of the quality of its work and reputation.

The company has been established by Dr. Elio D'Appolonia in 1956 in Pittsburgh (Pennsylvania).

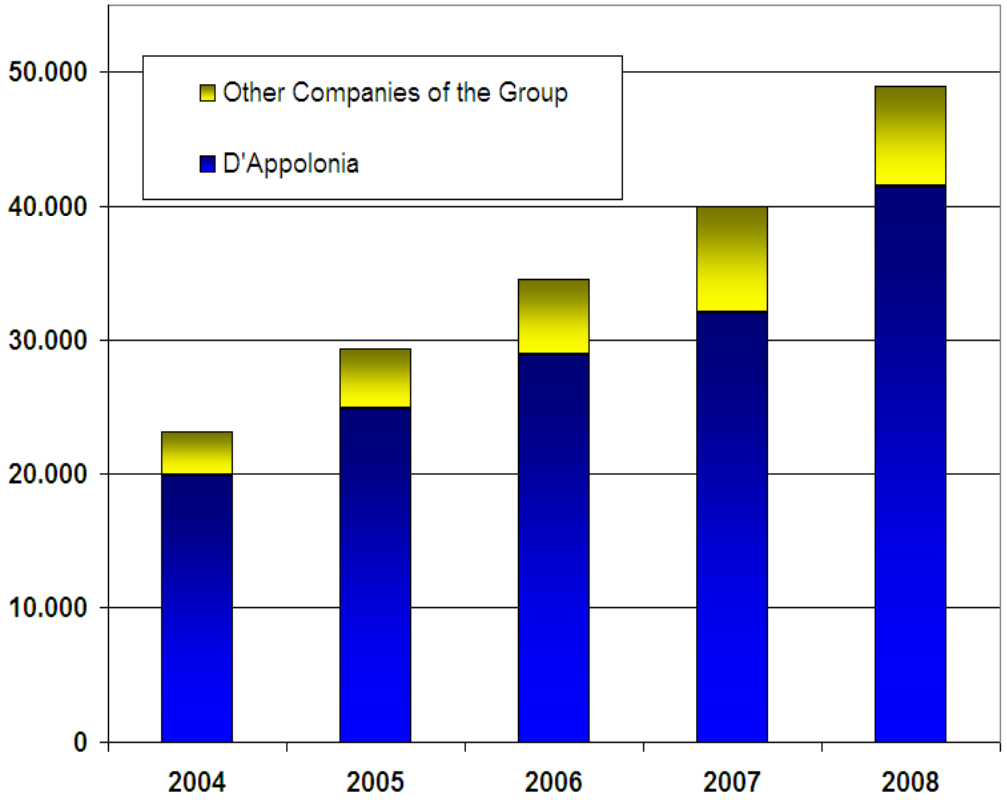
In 1981 the Genoa Italian office became the independent company D'Appolonia S.p.A.

PROJECT LOCATIONS



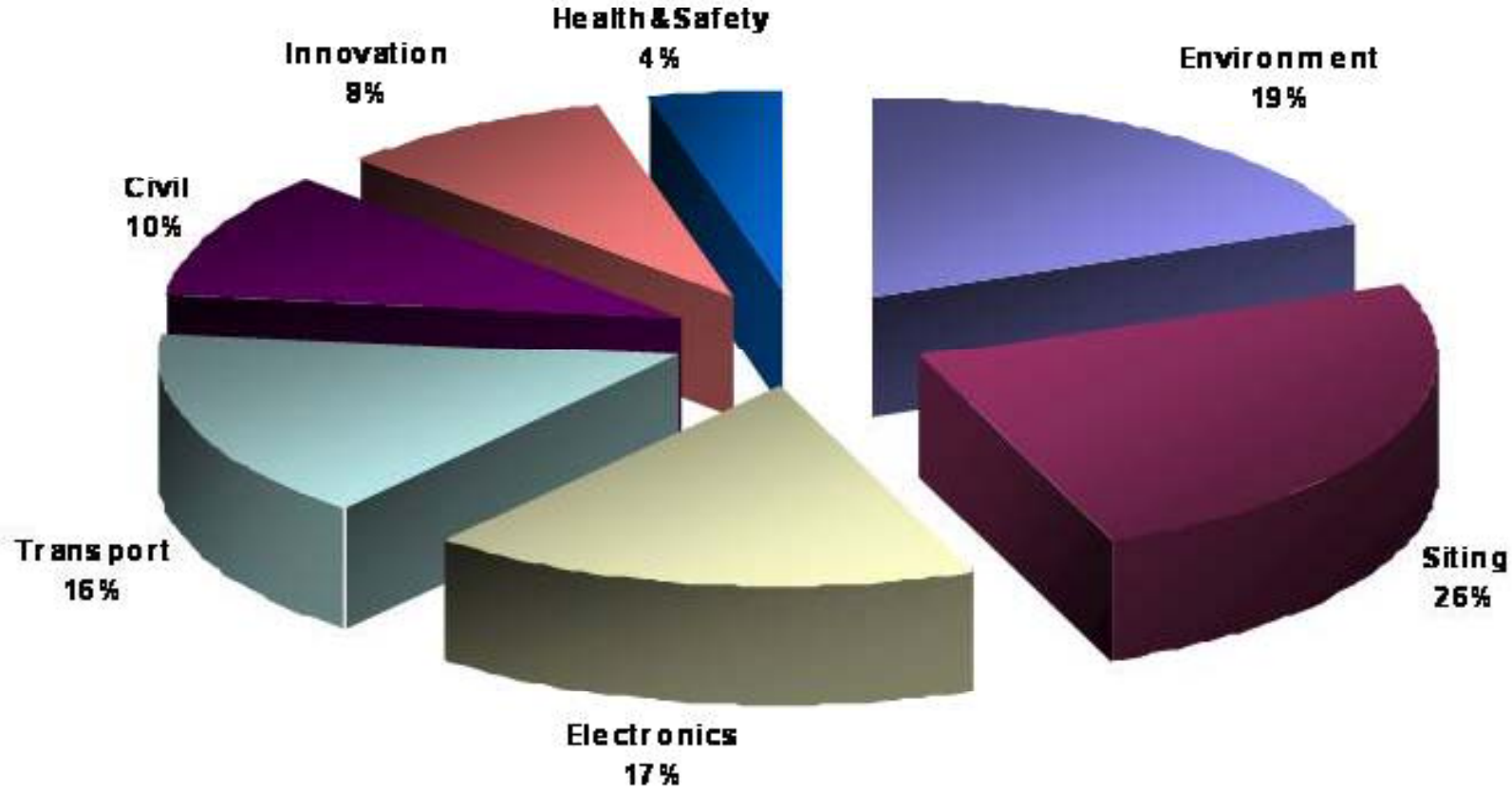
- Main operating offices
- Project and representative offices, project locations

COMPANY SIZE AND STAFF (year 2008)



- Production:
  - D'Appolonia S.p.A.: 41.5 M€ (estimate for 2008)
  - D'Appolonia Group : 49 M€ (estimate for 2008)
- Staff D'Appolonia Group:
  - about 450 people
- Staff D'Appolonia S.p.A.:
  - 290 people, 85% with a scientific degree
  - 25% of engineering personnel also granted a MSc or PhD

BUSINESS OVERVIEW



- Headquarters:
  - Via San Nazaro, 19
    16145 Genova – Italy
- National Offices:
  - Largo C. Salinari, 18/19
    00142 Roma
  - Via Martiri di Cefalonia, 2
    20097 San Donato Milanese
  - Via S. Pasquale a Chiaia, 62B
    80121 Napoli
  - SS 7 km 7,3 c/o Cetma
    72100 Brindisi
  - Via S. Maria dell'Arco, 19
    98121 Messina
- URL: www.dappolonia.it
- E-Mail
  fabio.bagnoli@dappolonia.it