The LIBI experience

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- **Some recent bioinformatics applications, particularly the ones where the main goal is the search or the comparison of entire genomes, are highly demanding in terms of computational resources.**

- **The collaboration with the bioinformatics community has begun with the BioinfoGRID project**
  - "…to promote the Bioinformatics applications for life science, in order to carry out research based on the Grid networking technology."

- **The collaboration has been extended in the LIBI project**
  - To create "Laboratory without walls", a virtual work space for the partners to contribute their infrastructures and to use the lab's tools by accessing each other's resources and know-how.

- **Technological Partners**
  - CINECA
  - INFN
  - SPACI / CACT-ISUFI - University of Lecce
  - IBM Italy (Java Technology Center in Bari)

- **Bioinformatics Partners**
  - CNRBA (CNR's Institute for Biomedical Technologies, Bari division)
  - UNIBO (University of Bologna)
  - UNIMI (University of Milano)
  - CBMTS (Center for Molecular Biomedicine, Trieste)

The bioinformatics needs

- **The project duration is 4 years and had 3 main milestones:**

  - MS1: first laboratory prototype
  - MS2: laboratory available for the partners
  - MS3: opening laboratory to external users

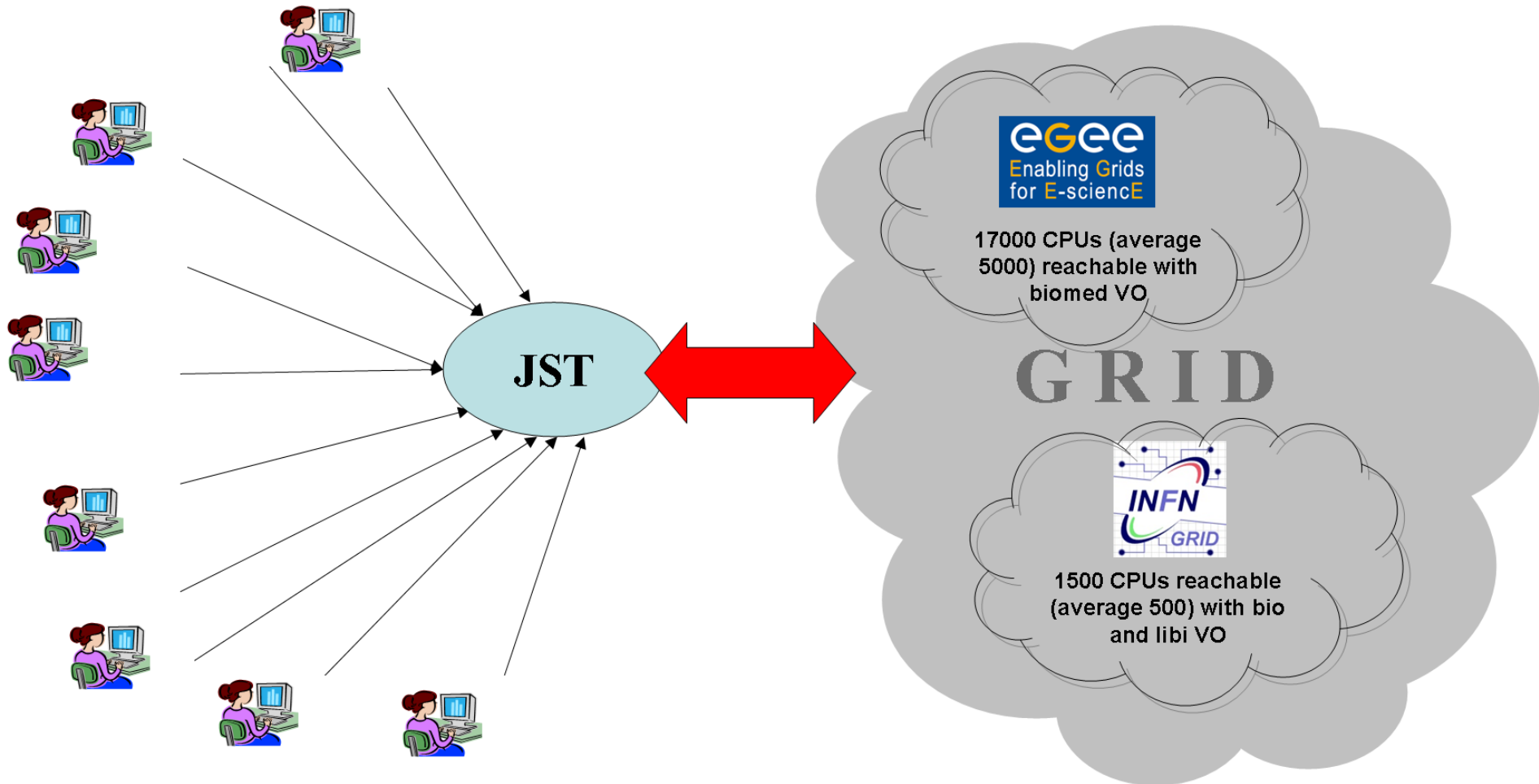| Year 1				Year 2				Year 3				Year 4			
Month1	Month4	Month7	Month10	Month1	Month4	Month7	Month10	Month1	Month4	Month7	Month10	Month1	Month4	Month7	Month10
WP1: requirements definition & re-definition															
WP1: survey & agreement with similar projects															
		WP1: Infrastructure design													
			WP1: check and monitoring of the implementation												
			WP2: GRID first prot.												
					WP2: GRID second prototype										
									WP2: GRID final prototype						
		WP3: PORTAL analysis & design													
					WP3: PORTAL first prototype										
									WP3: PORTAL workflow & final prot.						
		WP4: DATA federation													
		WP5: SERVICES design & 1 prot.													
					WP5: SERVICES second prot.										
									WP5: SERVICES final prototype						
				MS1							MS2				MS3

- **The Grid technology appeared to fit the requirements of bioinformatics applications since it can provide the needed computational power as well as the storage resources to record the huge amount of data produced.**

- **Different reliable tools were produced during the projects (LIBI and BioinfoGRID) to exploit the Grid infrastructure**

- **Furthermore a LIBI portal has been developed in order to gather all the tools and applications produced**
  - The portal should be the access door to the grid for the bioinformatics users

- **The project partners are asked to provide support for 5 more years**

- **The bioinformatics user would like to continue using the grid**
  - Many results were obtained thanks to this technology
  - Only a wide distributed computational power such as the grid one can execute their applications in a reasonable time

- **The tools to simplify the access to the grid should need a support in order to avoid the users to have a deep knowledge about this technology**

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- **The LIBI project has been already extended by one year (without funds)**
  - There could be no grid experts (fte) to support the users in the future

- **The INFN Bari has granted the access to the local resources to bioinformatics applications**

- **Thanks to Job Submission Tool we have given a certain autonomy in using the grid**
  - There should be a problem in submitting big challenges if there are no or few resources available for the Italian VOs (bio libi)

- **A support from IGI is needed in order to give to the bioinformatics community the needed grid expertise**