

# MICELEC Activities Summary

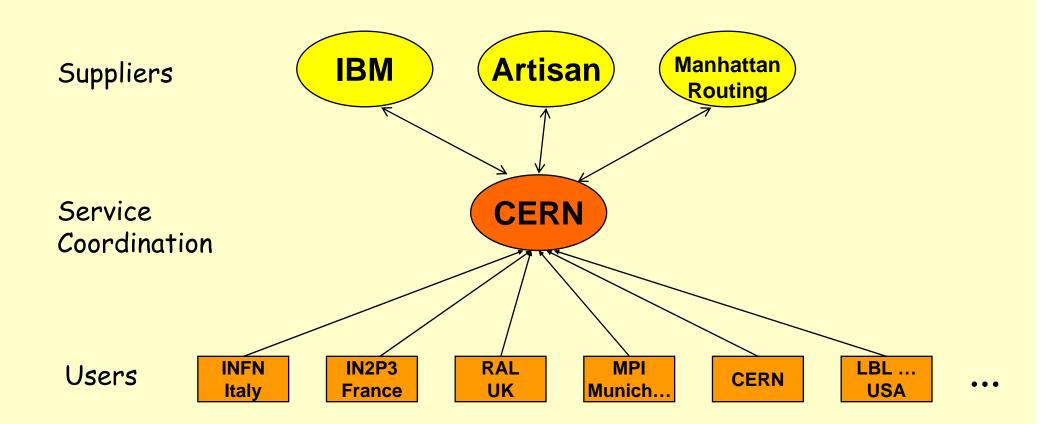
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#### Overview

- ◆ Services for microelectronic design in the HEP community
  - Distribution Model
  - Components to facilitate ASIC design
- How was the EUDET contribution spent

# Organizational model



#### Components

- ◆ Technology
- ◆ Design Assistance Package
- Design Services
- Prototyping and Production Services

## Technology

- ◆ Contract negotiation for entire (interested) HEP community
- ◆ For the SLHC and ILC Generation
  - IBM 130 nm CMOS, 90 nm later
  - IBM 130 nm BiCMOS

#### Technology Design Assistance Package •Design Rules Analog Simulation Models Verification Decks Foundry PDK Synopsys & Artisan Cell Cadence Library **DSM Tools Custom Design** Kit/Wrapper •~ 1000 Digital Cells Synthesis tools • I/O Cells Digital simulation tools Generators •Clock Tree Generation Advanced Place & Route Tools Verification Tools • Scripts and Tools to glue all together in one consistent design environment and a strict design flow A. Marchioro - CERN/PH 6

## Design Services

- Availability of tools and specific training for entire community
- Uniform and synchronized set of libraries, design methodology, tools for community simplifies participation to projects and exchange of expertise
- Assistance for design verification prior to submission (DRC and LVS), cell replacement
- Negotiation with foundry if special "rule violation" are required

## Prototyping and Production Services

- ◆ Depending on further funding approval, 2 MPW/year might become available from 2007 in 130 nm at reduced price
- Organization of shared proto/prod runs among different labs/projects
- ◆ Interface to foundry for production issues or special requests (nonstandard options, lot splits, etc.)

#### **EUDET** contribution

- ◆ Eudet contribution (complemented with CERN funds) has been spent mainly to purchase the design "wrapper" to complete the digital design package
  - Special conditions negotiated for HEP Institutes with Artisan—ARM and with Manhattan Routing
    - » CERN pays "master license" covering major support expenses
    - » Institutes pay (much) smaller annual maintenance fee
    - » Technical support provided to designers in external Institutes through CERN engineers