15 years of IUNET

IU.NET days - 5th edition
1st remote on-line event

On-line, 10-11 September 2020

Organized by University of Modena and Reggio Emilia

Consorzio Nazionale Interuniversitario per la Nanoelettronica

IU.nET

IU.NET in a nutshell

- Founded in 2005
- Mission
  - develop scientific partnership with research institutions and industry
  - carry out research in collaboration with public and private partners
  - disseminate and valorize results
- Legal Entity made of legal entities
- From 7 to 11 (soon 12) Universities
- Well defined term (12 years, renewable)
- Renewed in 2017 (IU.NET 2.0)
  - New statute acknowledges evolving scenario
- Almost 40 EC and national projects since start
  - FP6, FP7, FIRB, ENIAC, ECSEL, H2020, FLAG-ERA

IU.NET collaborative model

Context: <u>highly competitive, highly rewarding</u>

- Opportunity to express at European level top scientific activity and critical mass

- Increased competitiveness due to flexibility in covering at best different project needs

- Manage competition on access to large research / industrial players

- Guaranteed visibility of individual members at local (Univ.), national (MUR/MiSE) and EC level

- Leverage IUNET experience and best practices

- Share project preparation burden

- Fall-out on national / regional calls

IU.NET scientific interest areas (and projects)

- More Moore
  - Nanoscale CMOS in Silicon and III-Vs
    - PULLNANO, III-V-MOS, SINANO, NANOSIL, NANOICT, MODERN
  - Non volatile memories (FG-flash, PCM)
    - EMMA, FIRB, GOSSAMER
- Beyond Moore emerging devices
  - RRAMs and Ferroelectricdevices for AI
    - R2RAM, **BEFERROSYNAPTIC**
  - Tunnel FETs, Graphene
    - STEEPER, E2SWITCH, GRAND, GRADE
- More than Moore
  - Power devices (SiC, GaN)
    - E2CoGaN, **REACTION, WinSiC4AP, iREL4.0**
  - Energy, energy harvesting, energy/power management
    - END, ERG, E2SG, R2POWER300, **R23POWERUP, CONNECT, PROGRESSUS**
  - Sensors: devices, circuits, signals, systems
    - **CONVERGENCE, ADAS+, NEON, IN-FET**
  - MEMS
    - LAB4MEMS, LAB4MEMS-II
- Widely cross-cutting and system level topics
  - NANOFUNCTION, NEREID, Guardian Angels, **ARROWHEAD TOOLS, AI4DI, ADACORSA, CHARM**

Increasing device to circuit and system content (loosely speaking)
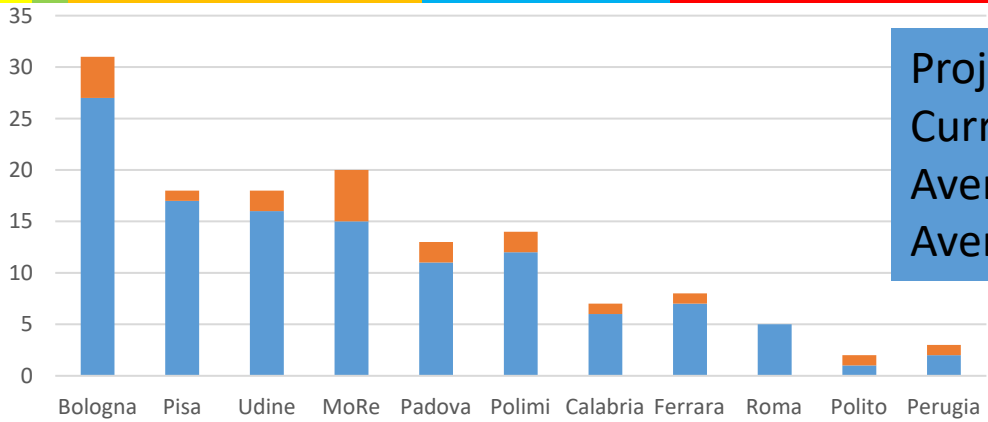
IU.NET projects and units

FP6 – FP7 **ENIAC** **ECSEL** **H2020**

	Funded Projects																																						Proposals										
	PULLNANO	EMMA	FIRB	NANOSIL	NANOICT	GRAND	GOSSAMER	NANOFUNCTION	GUARDIAN ANGELS	STEEPER	GRADE	E2SWITCH	III-V-MOS	MODERN	E2SG	END	ERG	E2COGAN	LAB4MEMS	LAB4MEMS2	R2POWER300	R3POWERUP	CONNECT	WINSICAP	REACTION	ADAS+	NEON	AHTOOLS	AI4DI	CHARM	ADACORSA	iREL4.0	PROGRESSUS	NEREID	R2RAM	IN-FET	BEFERROSYNAPTIC	CONVERGENCE	YESVGaN	ENERGY ECS	TRANSFORM	GaN4AP	STORAIGE	HYMN	AI2MIND	PROJECTS	PROPOSALS	TOTAL
Bologna	x		x	x		x		x	x	x	x	x	x	x	x	x	x	x	x		x	x	x					x	x			x	x					x	x	x	x	x				27	4	31
Pisa	x		x	x	x				x	x	x			x		x			x	x	x		x					x				x							x							17	1	18
Udine	x		x	x		x	x	x	x	x	x	x	x								x											x			x	x		x	x						x	16	2	18
MoRe		x	x			x	x						x	x	x	x	x																	x	x	x		x	x	x	x	x	x	x	15	5	20
Padova		x	x												x	x	x				x	x	x								x		x					x	x			x			11	2	13
Polimi	x	x	x	x			x		x					x					x		x							x	x			x						x				x	x		12	2	14
Calabria														x		x	x						x	x								x											x			6	1	7
Ferrara			x			x								x	x						x											x						x					x			7	1	8
Roma			x											x	x															x								x								5	0	5
Polito																																						x	x							1	1	2
Perugia																														x	x								x							2	1	3

Projects		38
Current proposals		7
Average partners per project		3
Average projects per year		3