MNBS IN FP7 & ENIAC/ARTEMIS

MARCH 2015

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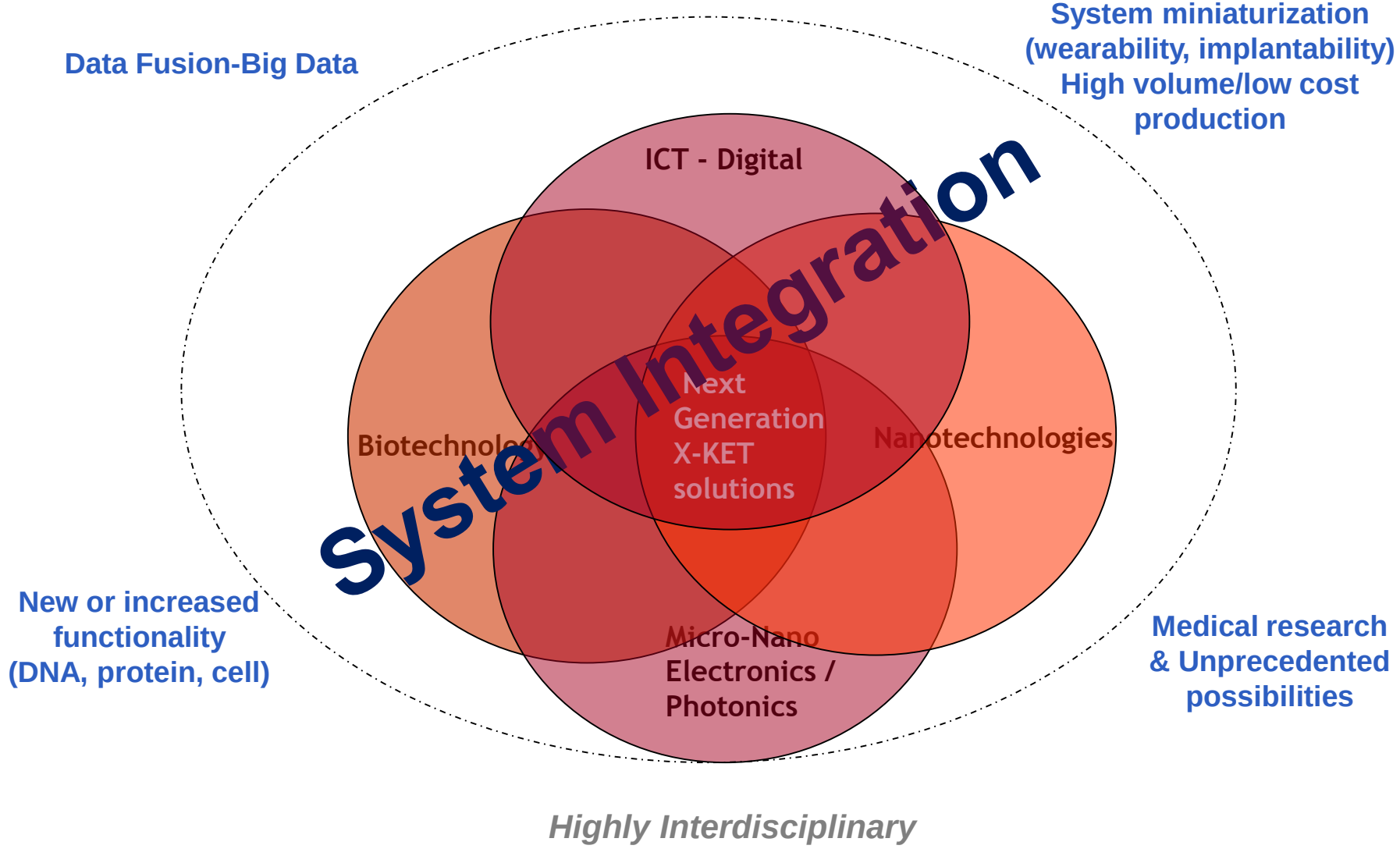
EUROPEAN COMMISSION
DG CONNECT, DIGITAL INDUSTRY, ELECTRONICS COMPETITIVE INDUSTRY

New Generation Technology Opportunities at the Convergence of Micro-Nano-Bio-ICT-Systems



List of MNBS projects funded under DG CONNECT, Components in FP7 and by ENIAC & ARTEMIS Joint Undertakings (JUs) [2006-2013]

Acronym	Programme	Title
ACTION	FP7	ACTive Implant for Optoacoustic Natural sound enhancement
ANGELab	FP7	A New GEnetic LABortatory for non-invasive prenatal diagnosis
ARAKNES	FP7	Array of Robots Augmenting the KiNematics of Endoluminal Surgery
ARROWS	FP7	Advanced interfaced microsystems Research for analysis of Real-wOrld clinical, food, environmental and Waste Samples
BIOFOS	FP7	Micro-ring resonator-based biophotonic system for food analysis
CAJAL4EU	ENIAC	Chip architectures by joint associated labs for European diagnostics
CanDo	FP7	A CANcer Development mOnitor
CHIRON	ARTEMIS	Cyclic and person-centric Health management
CSI	ENIAC	Central nervous system imaging
DeNeCor	ENIAC	Devices for NeuroControl and NeuroRehabilitation
DiscoGnosis	FP7	Disc-shaped point-of-care platform for infectious disease diagnosis
FoodMicroSystem	FP7	Microsystems and Smart Miniaturised Systems for Food Quality and Safety
FOODSNIFFER	FP7	FOOD Safety at the point-of-Need via monolithic spectroscopic chip identiFying harmFul substances in frEsh pRoduce
Heart-e-Gel	FP7	Microsystem integration based on electroactive polymer gels for cardiovascular
HIGH PROFILE	ARTEMIS	Introducing end-to-end neuro-imaging; Innovation based on leveraging cross-domain building blocks
INCITE	ENIAC	Intelligent Catheters in Advanced Systems for Interventions
LabOnFoil	FP7	Laboratory Skin Patches and SmartCards based on foils and compatible with a
LOVE-FOOD	FP7	Love wave fully integrated Lab-on-Chip platform for food pathogen detection
MAS	ENIAC	Nanoelectronics for mobile ambient assisted living (AAL) systems
MfManufacturing	ENIAC	European initiative for the standardization and manufacturability of complex micro-fluidic devices
microFLUID	FP7	micro-Fabrication of polymeric Lab-on-a-chip by Ultrafast lasers with Integrated optical Detection
MIRACLE	FP7	Magnetic Isolation and moleculaR Analysis of single CircuLating and disseminated tumor cElls on chip
ML³	FP7	Design platform for economic production of multilayer Micro-Nano Bio Systems
NANODEM	FP7	NANOphotonic DEvice for Multiple therapeutic drug monitoring
NANOMA	FP7	Nano-Actuators and Nano-Sensors for Medical Applications
NEUWalk	FP7	Neuroprosthetic interface systems for restoring motor functions
NextDx	FP7	Next-generation integrated MNBS-platform for instant diagnostics with single-molecule resolution
PASCA	FP7	Platform for Advanced Single Cell-Manipulation and Analysis
Pocket	FP7	Development of a low-cost point-of-care test for Tuberculosis detection
PodiTrodi-EU	FP7	Technology Platform for Point-of-Care Diagnostics for Tropical Diseases - EU
Positive	FP7	A highly integrated and sensitive POROus SIlicon based lab on a chip for multiple quantitaTIVE monitoring of Food allergies at point of care.
PYTHIA	FP7	Monolithically Integrated Interferometric Biochips for label-free Early Detection of Human Diseases
SIMS	FP7	Development of a Smart Integrated Miniaturised Sensor System for analytical challenges in diagnostics, industry and the environment
SWAN-iCARE	FP7	Smart wearable and autonomous negative pressure device for wound monitoring and therapy
SYMPHONY	FP7	Integrated SYsteM based on PHOtonic Microresonators and Microfluidic Components for rapid detectioN of toxins in milk and dairY products
TIME	FP7	Transverse, Intrafascicular Multichannel Electrode system for induction of sensation and treatment of phantom limb pain in amputees
ULTRA	FP7	Ultra-fast eLectronics for Terahertz Rapid Analysis in compact lab-on-chip
ULTRAsponder	FP7	Invivo Ultrasonic Transponder System for Biomedical Applications
With-Me	ARTEMIS	The European Platform to Promote Healthy Lifestyle and improve care through a Personal Persuasive Assistant

A Snapshot of MNBS under FP7

Food/beverage contamination
Food pathogens detection & safety
Point-of-need detection
Miniaturised complete solution
Lab-on-chip

Point of care testing & IVD
Allergy detection
Tropical diseases detection
Tuberculosis detection
Chronic diseases monitoring
Malaria and fevers detection
Foetal mutation detection
Cancer early detection/diagnosis
Pathogen, drugs detection
Lab-on-Chip

Treatment of phantom limb pain in amputees
Neuro stimulation
Motricity restoration
Parkinson disease treatment
Hearing impairment treatment
Cochlear stimulation
Drug monitoring POC in transplanted patients
Cardiovascular repairing
Invasive MNBS
Smart Implants and stimulators
Actuators-EAP, Infrared Laser

TIME
NEUWalk
ACTION
ULTRAsponder
NANODEM
Heart-e-Gel

BIOFOS
SYMPHONY
FOODSNIFFER
LOVE-FOOD

Terahertz Electronics for LoC
ULTRA

Generic LoC
ARROWS
SIMS

Single cell Detection & manipulation
PASCA

LoC Design-Manufacturing-Production
microFLUID
ML²

PYTHIA
Positive
PodiTrodi-EU
Pocket
NextDx
DiscoGnosis
ANGELab
CanDo
MIRACLE
LabOnFoil

Clinical platforms

Breast cancer
Magnetic guided drug delivery nano-carriers
NANOMA

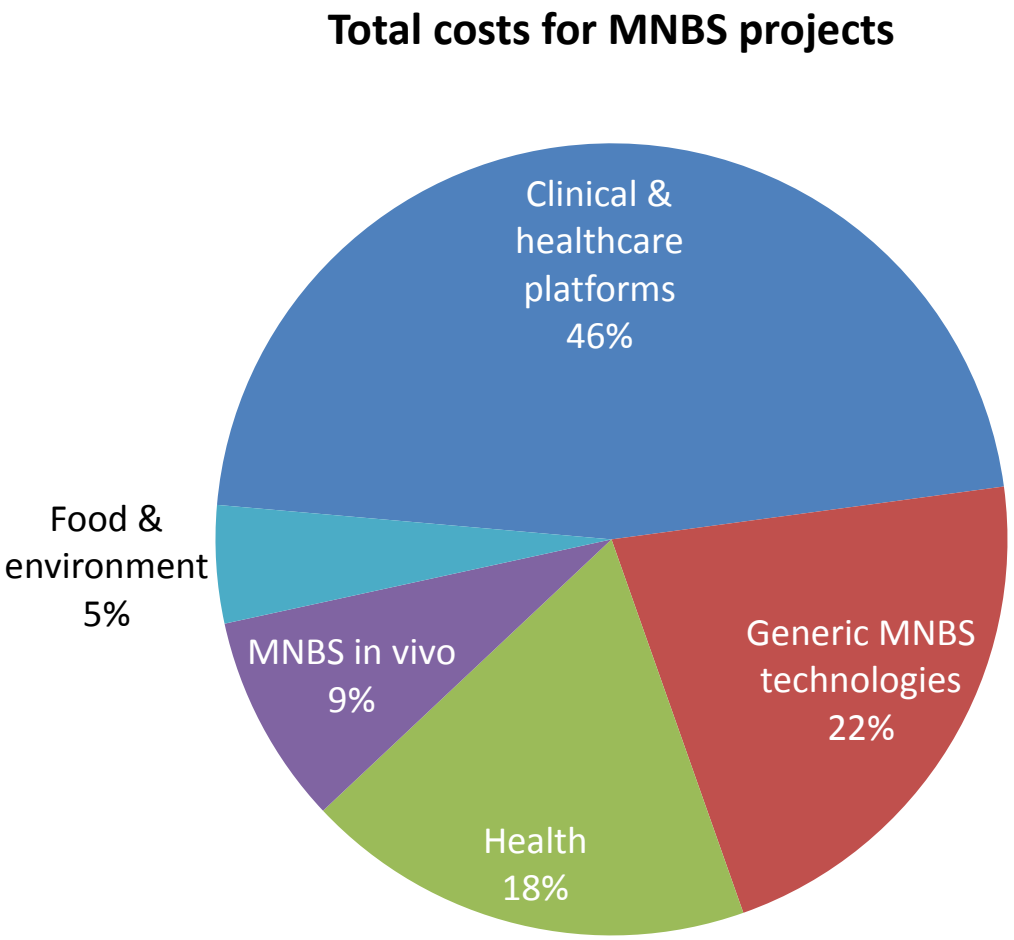
Minimally invasive surgery
Robotics
ARAKNES

Chronic wounds & ulcers Monitoring & Therapy
Wearable Systems
Body sensors
SWAN-iCARE

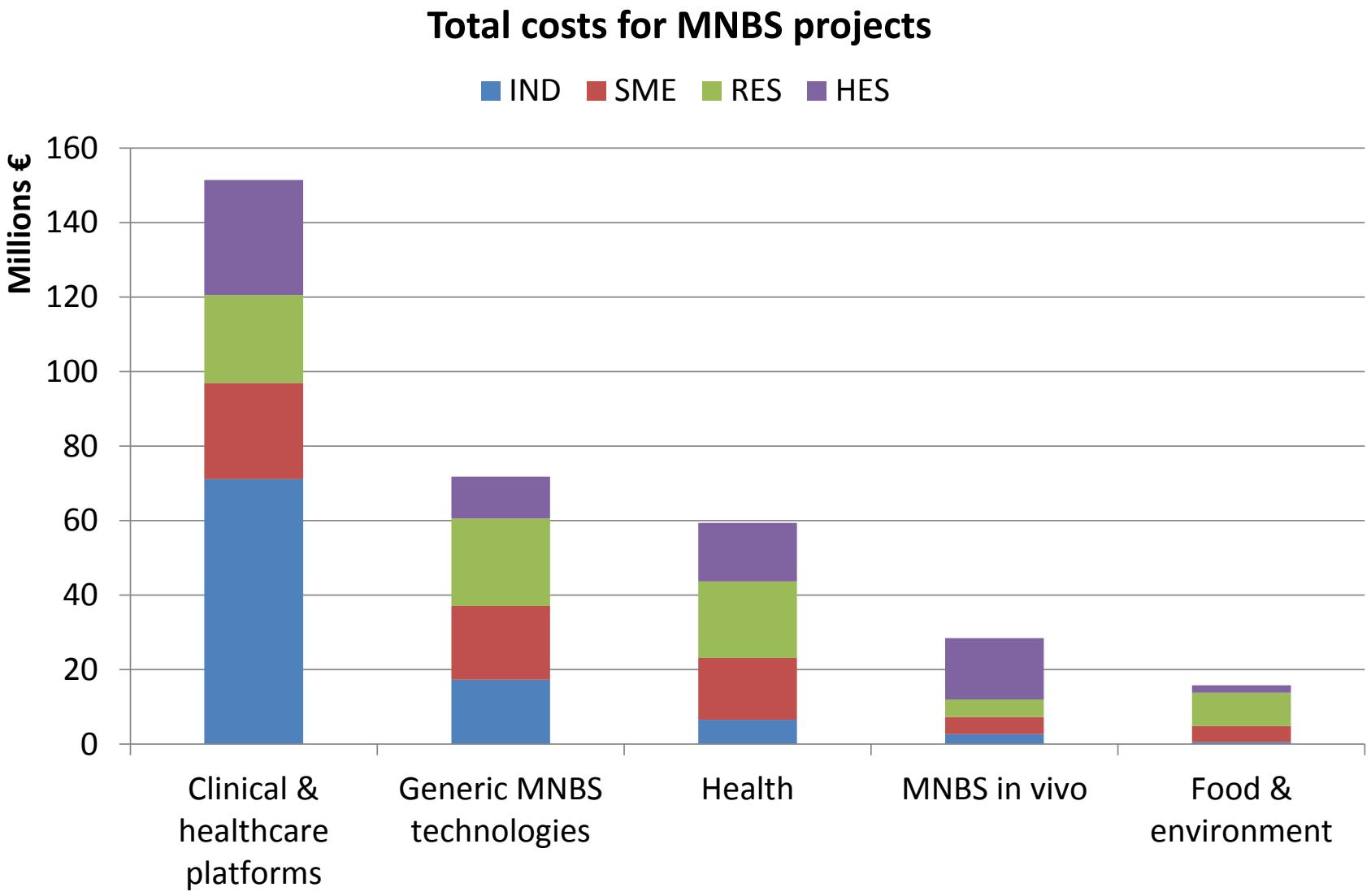
Coordinated & Support Actions
FoodMicroSystems
+ COWIN, EXPRESS

In vivo MNBS and Clinical Platforms

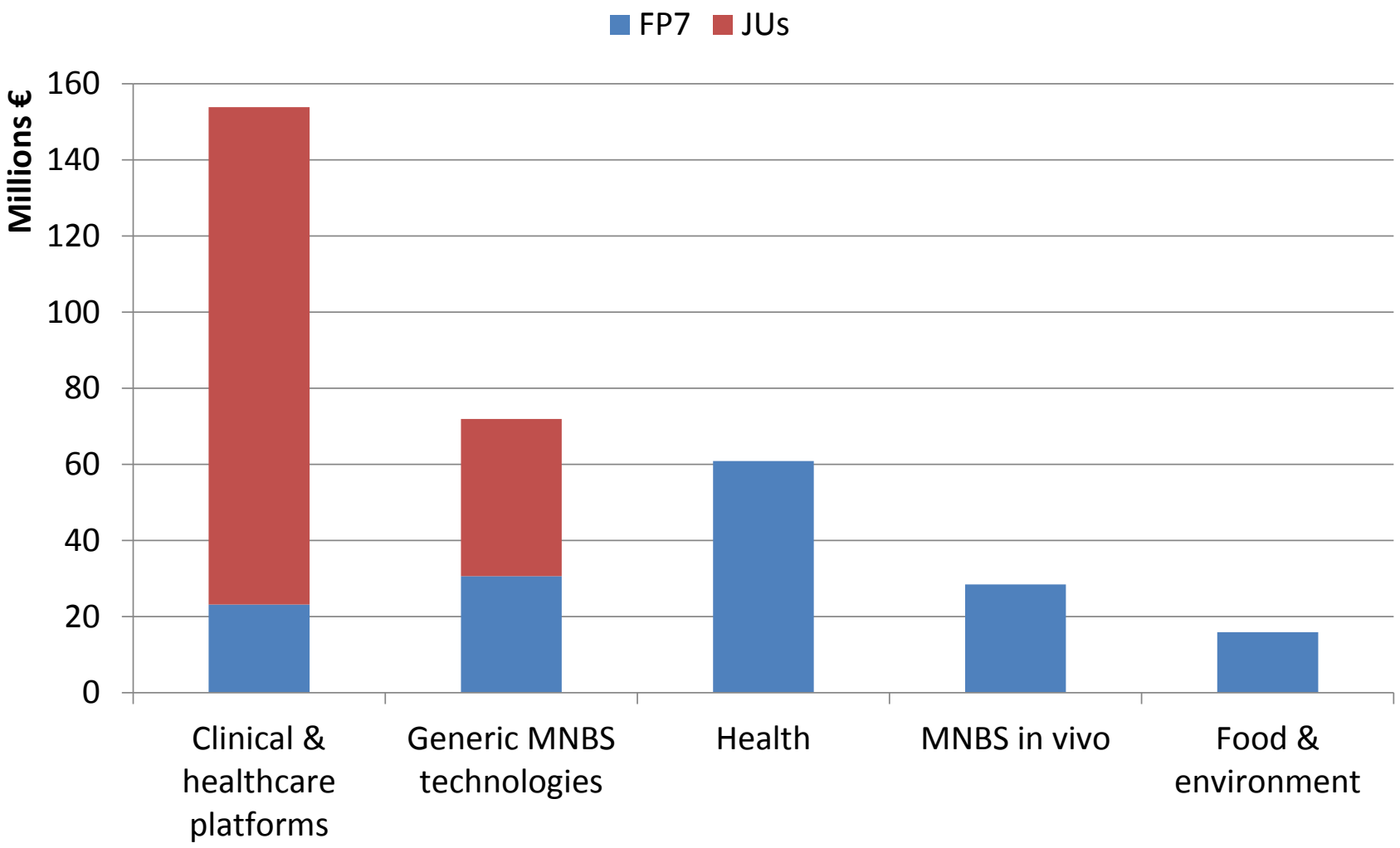
MNBS overview

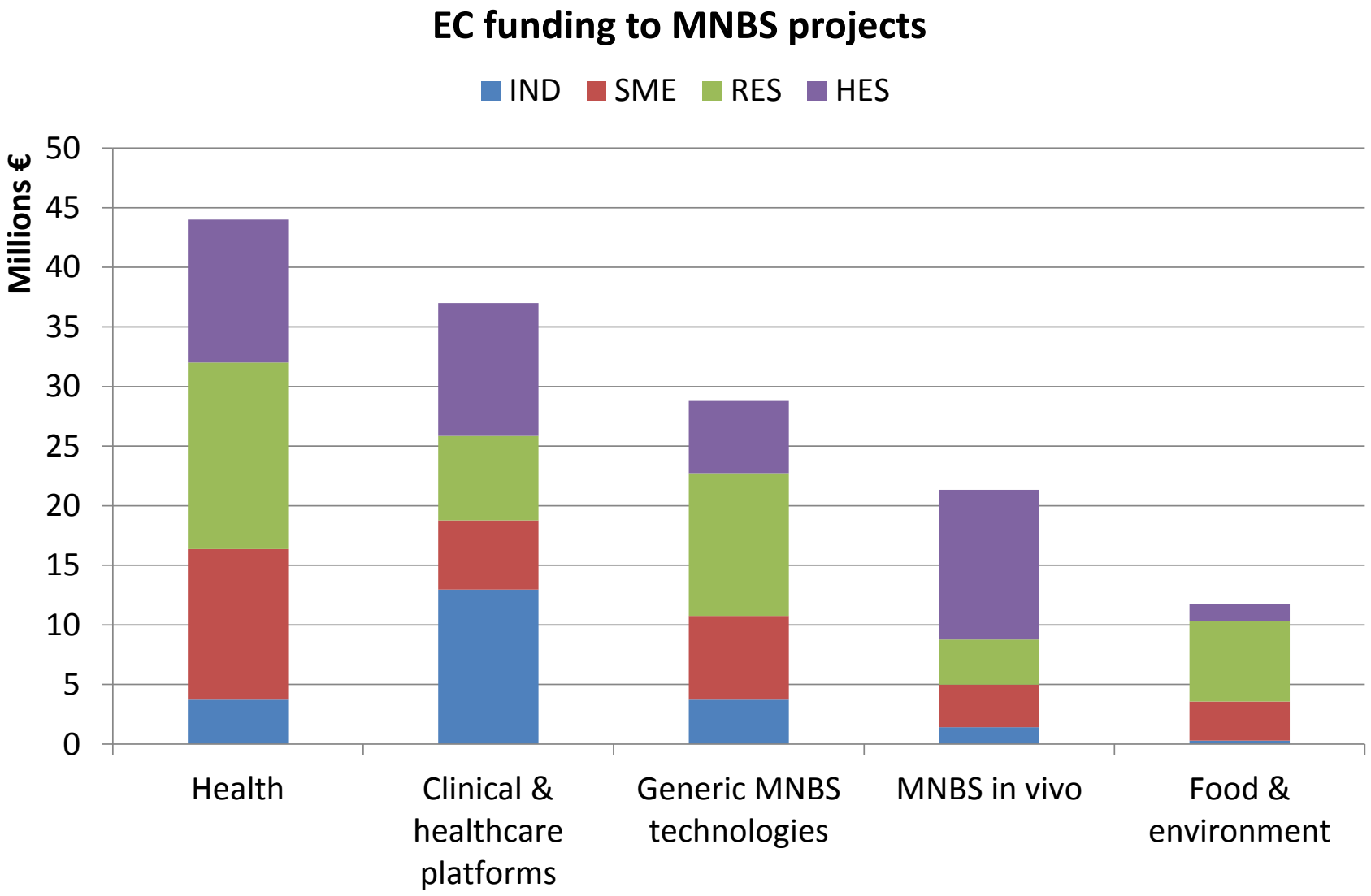


- 39 projects (77% in FP7)
- Total costs 331 M€ (50/50 between FP7 & JUs)
- EU funding 145 M€ (80% in FP7)
- 484 participants with 34% SMEs


Total costs for MNBS projects
IND
SME
RES
HES
Millions €
160
140
120
100
80
60
40
20
0
Clinical & healthcare platforms
Generic MNBS technologies
Health
MNBS in vivo
Food & environment

Total costs for MNBS projects




EC funding to MNBS projects
IND
SME
RES
HES
Millions €
50
45
40
35
30
25
20
15
10
5
0
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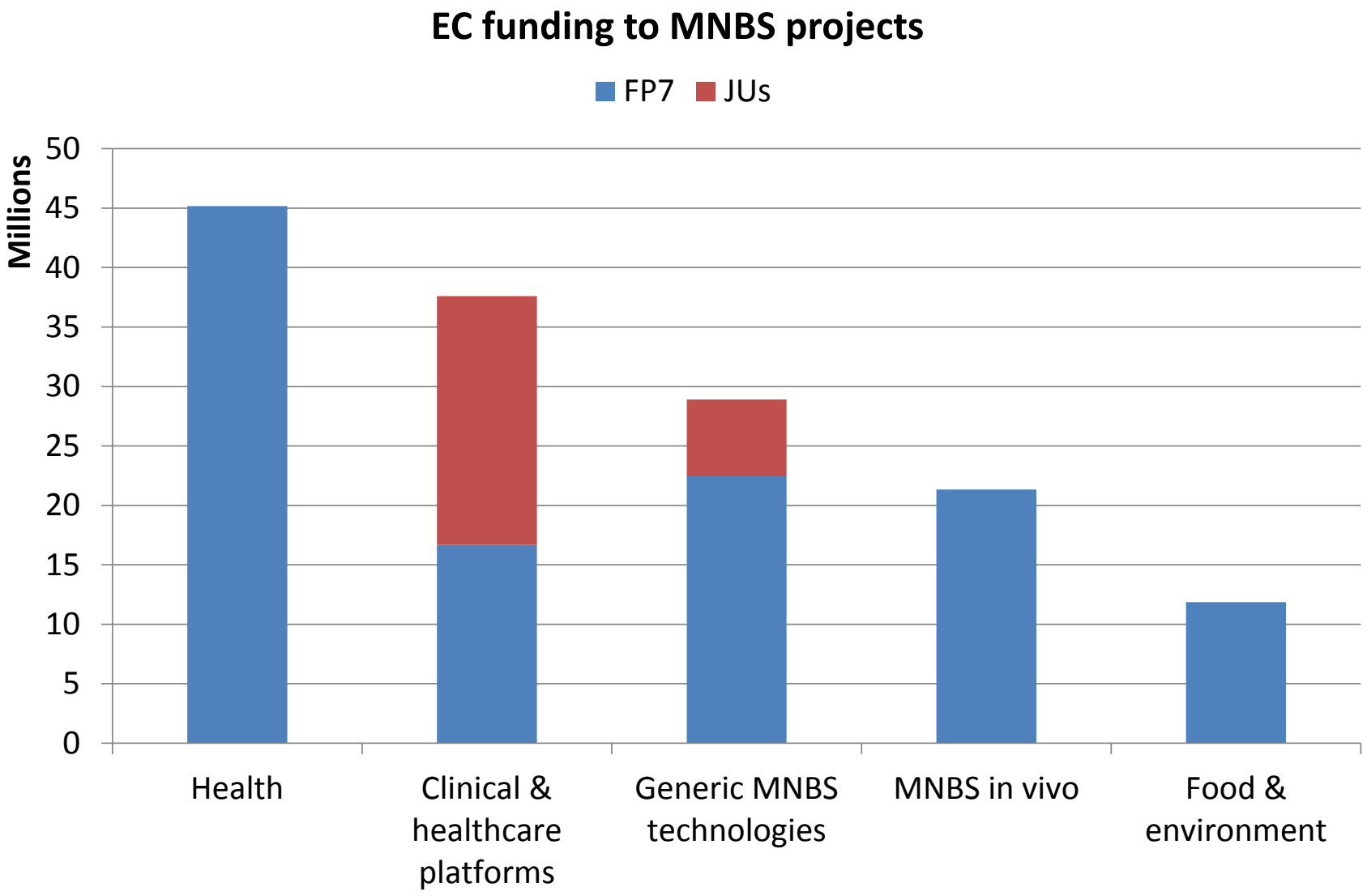
Food & environment


EC funding to MNBS projects
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