

## ANNEX

### Section 8.2 – Annex: Partnerships

Nbr-(City) Teams: name, identification, team leader, laboratory, administrative institutions	Axe in the project	Domains of expertise and research	Constitution: number of equivalent full time senior researchers of the team, Doc and Post-doc. <b>Specific equipment</b>	Collaborations: running collaboration, national, international	Funding: recurrent resources, research contract, etc.
<b>Alphabetic classification with some regional grouping when appropriate, networks are at the end</b>					
<b>1-(Angers)</b> <b>team- GLIAD Design and Application of Innovative Local treatments in Glioblastoma</b> Emmanuel Garcion <b>CRCINA</b> <b>INSERM U1232</b>  INSERM - Université d'Angers, IBS - CHU, 4 Rue Larrey, F-49933 Angers	1,3	<ul style="list-style-type: none"> <li>• Glioblastoma</li> <li>• Nuclear medicine</li> <li>• Vectorized radiation therapy</li> <li>• Preclinical models</li> <li>• miRNA targeting and delivery</li> <li>• Micro and Nanomedicine</li> <li>• Drug delivery</li> <li>• Imaging</li> </ul> Theranostics	8 Principal investigators 5 ITA 3 postdocs 12 PhD students  <b>Specific equipment:</b> Shielded enclosure Synthesis robotic platform Hypoxic chamber L2 cell culture rooms Stereotaxic injection platform Analytic apparatus (microplate reader, cytometric station, HPLC, etc...)	<ul style="list-style-type: none"> <li>• <u>National</u>                CBM Orléans                GIN Grenoble  <b>ONIRIS Nantes</b>                Univ. Lille 2                CRCINA Team 4, 13, 14</li> <li>• <u>International</u>                University of Liège (Be)                University of Nottingham (UK)                University of Santiago de Compostela (Spain)                University of Modena (Italy)                Technion (Israël)                University of La Plata (Argentina)                University of Western Cape (South Africa)                Unicamp (Brazil)</li> </ul>	INSERM University of Angers European Commission NANOFAR ANR – LABEX IRON Inca PL_BIO MARENGO Ligue Nationale contre le Cancer Région PDL MECASTEM NANOFAR+ Cancéropole GO
<b>2-(Avignon)</b> <b>Léa Vazquez,</b> <b>DVM, MsC</b>	1,2,3	<ul style="list-style-type: none"> <li>• Preclinical research</li> <li>• Radiation therapy</li> <li>• Comparative oncology</li> </ul>	Funding to support the development of a platform dedicated to preclinical studies through irradiation of cats and dogs is currently under research		
<b>3-(Bordeaux)</b> <b>INSERM U1035, BMGIC</b> (Biothérapie des maladies génétiques inflammatoire et du cancer) <b>Team leader : Pr François Moreau-Gaudry</b> <b>University of Bordeaux</b> (will become part of BRIC on January 2022) <b>CHU Bordeaux</b>	Combi ned therapi es	<b>Radiobiology</b> <b>Vectorology</b> <b>Pre-clinical irradiation</b> <b>Radiosensitization</b> of pancreatic cancer and rectal cancer using BFCs <b>CRISPR-cas9</b> <b>Extracellular vesicles</b> (rectal cancer response evaluation after chemoradiotherapy) <ul style="list-style-type: none"> <li>• <b>X-PDT</b> (Glioblastoma radiosensitization by 5-ALA)</li> </ul>	Senior researchers :3ETP Doc: 2ETP Specific equipment: Vectorology platform XENX Pre-clinical irradiator	<b>CELIA</b> <b>IBGC-UMR 5095</b> <b>ISVV (institute de la vigne et du vin)</b> <b>INSERM 1029</b>	GSO Siric brio Ligue Inserm university
<b>4-(Bordeaux)</b> <b>POPRA : Programme Optique, Physique Radiothérapie en Aquitaine)</b>	2,3,4	<ul style="list-style-type: none"> <li>• <b>Algorithms of dose calculation (CELIA)</b>, for external- internal- and brachy</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Institut Bergonié</b>                0,2 ETP admin.                0,4 ETP med.                0,75 ETP med. phys.</li> </ul>	<ul style="list-style-type: none"> <li>• <u>National</u> :                – Pôle de compétitivité laser (RLH)                – Cancéropole GSO (axe technologie et santé)</li> </ul>	Conseil Regional Nouvelle-Aquitaine (co-funding) and

<p>Pr Guy Kantor Consortium:</p> <ul style="list-style-type: none"> <li>• Institut Bergonié,</li> <li>• CHU Bordeaux</li> <li>• CELIA (University, CNRS, CEA)</li> <li>• CENBG(CNRS IN2P3, University)</li> <li>• INRIA (équipe Monc, IMB)</li> </ul> <p>LaBRI</p>		<p>radiotherapy, MRI and LINAC</p> <ul style="list-style-type: none"> <li>• Energetic Sources created by ultra-intense laser (CELIA) protontherapy</li> <li>• Comparative dosimetry</li> <li>• Nano medicine CENBG radio enhancement measurements</li> <li>• Spectral Measurements beams (CHU, CENBG)</li> <li>• Adaptative radiotherapy, Evaluation (MONC/INRIA)</li> </ul> <p>X rays produced by laser for imaging (Alphanov)X-pulse project</p>	<ul style="list-style-type: none"> <li>• CHU : 0,25 ETP med. phys.</li> <li>• CELIA: 2x 0,5 phys.; 4 PhD (1 past)</li> <li>• CENBG : iRiBio : 4 x 0,5 ETP, 2 Doc (1Past), 2 Post-doc (2 Past)</li> <li>• LaBRI : 0,5 ETP; 1 doc</li> <li>• Inria : 2 doc (past)</li> </ul>	<ul style="list-style-type: none"> <li>– Oncopôle Toulouse,</li> <li>– Centre Antoine Lacassagne de Nice</li> <li>– CEA</li> <li>– ICMCB (nano chemistry)</li> <li>– Aquitaine sciences transfert (AST/SATT)</li> <li>– Industrial partnership <u>International</u>: Univ of Dresden (Germany)</li> </ul>	<p>European FEDER funds</p> <p>University of Bordeaux ; CNRS ; CEA ; IDEX; ANR; Cancropôle GSO</p> <p>European PM Curie program</p>
<p><b>5-(Brest)</b></p> <p>LaTIM, Team ACTION, Dimitris Visvikis INSERM UMR1101, UBO, IMT Atlantique,</p> <p>CHRU Morvan, Bat 1, 2 Av. Foch, 29609 Brest cedex</p>	<p>1,4</p>	<ul style="list-style-type: none"> <li>• Image guided radiotherapy</li> <li>• Multimodality quantitative imaging</li> <li>• Intra-operative radiotherapy</li> <li>• Image processing</li> </ul> <p>Tumor modeling</p>	<p>11,5 FTE senior researchers Postdocs : 6 PhD students : 10</p> <p><b>Equipment:</b></p> <ul style="list-style-type: none"> <li>• TheraFonc Platform:</li> <li>• Varian TrueBeam Novalis (50% temps R&amp;D)</li> <li>• Aixplorer US imaging platform (100% R&amp;D)</li> <li>• Dual energy CT scan (dedicated to R&amp;D in radiotherapy)</li> </ul> <p>Intensive computing and modelling platform (1000 CPUs, 40 Tflops; 100 GPUs, 380 Tflops)</p>	<ul style="list-style-type: none"> <li>• <u>Regional</u>: Director: CGO network on “Targeting and Radiotherapies” 25 labs and 17 clinical teams INSERM Tours, CRCINA, LTSI, CRCINA, LabEx CominLabs: image processing; multi-scale modeling for radiotherapy treatment</li> <li>• <u>National</u> TIMC, ICUBE, CHU Grenoble, LabEx CAMI</li> <li>• <u>International</u> MAASTRO, CHU Liege, Torino, DKFG Heidelberg, Dresden,SIEMENS, Montreal; Univ Patras, BET solutions (Grece); Libra (UK), St Thomas.</li> </ul>	<p>INSERM lab recurring funding</p> <p>Industrial contract: VARIAN, SIEMENS</p> <p>Research contracts: MC ITN PREDICT; ANR: tGATE, FOCUS; CGO: Mumofrat, MATURE; INCA : PRINCE; LaBEX CAMI: project CAPRI; CE: project ERROR</p>
<p><b>6-(Brest)</b></p> <p>Radiotherapy department, CHRU Brest Pr Olivier Pradier</p> <p>CHRU Morvan, 2 av. Foch, 29200 Brest</p>	<p>1,3</p>	<ul style="list-style-type: none"> <li>• Radiomics in radiotherapy</li> <li>• Adaptive radiotherapy Image guided radiotherapy</li> <li>• Combination treatment: Chemotherapy/US mediated radiobiology effects</li> </ul>	<p>3.5 FTE senior researchers; 4 Doc., 1 Post-doc</p> <p><b>Equipment:</b></p> <p>Cellular Analysis laboratories Varian TrueBeam Novalis (50% R&amp;D) INTRABEAM platform (50% R&amp;D)</p>	<ul style="list-style-type: none"> <li>• <u>Regional</u>: INSERM Tours, LTSI, CRCINA, LaBEX CominLabs: image processing; multi-scale modeling for radiotherapy treatment</li> <li>• <u>National</u> TIMC Grenoble: intra-operative radiotherapy</li> </ul>	<p>Research contracts: MC ITN PREDICT ANR : FOCUS Cancéropole GO: Mumofrat</p> <p>Industrial contract: VARIAN</p>
<p><b>7-(Caen)</b></p>	<p>4</p>	<ul style="list-style-type: none"> <li>• Nuclear physics : <b>fragmentation</b> and</li> </ul>	<p>6 Senior researchers (4.7 FTE)</p>	<ul style="list-style-type: none"> <li>• IPHC (Strasbourg)</li> <li>• ICPO (Orsay)</li> </ul>	<ul style="list-style-type: none"> <li>• CNRS/IN2P3</li> <li>• ANR (EquipEx)</li> </ul>

<p><b>Medical Applications Group,</b> Jean-Marc Fontbonne, <b>LPC-CAEN UMR6534,</b> <b>Normandie Univ,</b> ENSICAEN, UNICAEN, CNRS/IN2P3, LPC Caen</p>		<p>beta+ emitters in hadrontherapy</p> <ul style="list-style-type: none"> <li>• <b>Instrumentation</b> : beam diagnostics, monitors units and dosimetry devices.</li> <li>• Computing : multiscale <b>modeling</b> of clinical outcomes in radiotherapy and protontherapy.</li> </ul>	<p>5 doc and post-doc A large vacuum chamber for detectors Proximity of GANIL and CYCLHAD</p>	<ul style="list-style-type: none"> <li>• Centre François Baclesse (CFB, Caen)</li> <li>• Centre Paul Strauss (CPS, Strasbourg)</li> <li>• CIMAP, GANIL, ARCHADE (Caen)</li> <li>• IMPT (Nice)</li> </ul>	<ul style="list-style-type: none"> <li>• Possible Regional funding</li> </ul>
<p><b>8-(Caen)</b> <b>CERVOxy group</b> Myriam Bernaudin &amp; S Valable <b>ISTCT laboratory</b> GIP CYCERON, CNRS-CEA-UNICAEN</p>	<p><b>1,2,3</b></p>	<p>Translational research in <b>hypoxia and brain tumors</b>, with multidisciplinary approaches (from molecular biology to imaging).</p>	<p>27 FTE: 3 CNRS researchers, 10 prof/lecturers, 6 engineers/tech, 10 Doc.; 3 Post-docs <u>Specific equipment</u> for cell and mol. biology (hypoxic chambers, time-lapse), animal surgery. Own non-human primate breeding (marmosets) Access to animal care facility (ONCOModels/CURB) and imaging platform (CYCERON)</p>	<ul style="list-style-type: none"> <li>• <u>National</u> – UGA 7442 RSRM, Grenoble – CRCINA Inserm U1232, Nantes – CLCC Becquerel, Rouen – CLCC Baclesse, Caen – LCS UMR6506, Caen – LARIA UMR6252, Caen – LPC UMR6534, Caen</li> <li>• <u>International</u> CRUK/MRC Oxford Institute for Radiation Oncology</li> </ul>	<ul style="list-style-type: none"> <li>- CNRS, UNICAEN</li> <li>- ANR: Maestro, Labex IRON, EquipEx Rec-Hadron, France HADRON</li> <li>- INCa PLBIO Zeoxy</li> <li>- Région Normandie MET-Oxy (RJC)</li> <li>- Cancéropôle Nord-Ouest (Emergence)</li> <li>- Ligue Contre la Cancer</li> </ul>
<p><b>9-(Caen)</b> <b>LDM TEP group,</b> Pr Louisa Barré &amp; C Perrio <b>ISTCT laboratory</b> GIP CYCERON, CNRS-CEA-UNICAEN</p>	<p><b>1</b></p>	<p>LDM TEP team develops and evaluates <b>novel PET probes</b> using radionuclides as <math>^{11}\text{C}</math>, <math>^{18}\text{F}</math>, <math>^{68}\text{Ga}</math>.</p>	<p>3 researchers (2CEA, 1CNRS), 6 engineers / tech., 4 Doc, 2 Post-docs</p> <p><b>Specific equipment</b> Labs for radiochemistry and quality control of radionuclides and radiopharmaceutics</p>	<ul style="list-style-type: none"> <li>• <u>National</u> – CLCC Baclesse, Caen – CERMN, Caen – COBRA, Rouen – Subatech, Nantes – CRCINA, Nantes – IMIV, Orsay – CHRU, Caen</li> <li>• <u>International</u> – Rotterdam /Erasmus center – Barcelona/ IMIM Hospital del Mar research center – Louvain/ UCL – Texas University /A&amp;M</li> </ul>	<ul style="list-style-type: none"> <li>-CEA</li> <li>-CNRS</li> <li>-ANR IRON</li> <li>-SANOFI</li> <li>-Cancéropôle Nord-Ouest</li> <li>-Région Normandie</li> <li>-Fédération INC3M</li> </ul>
<p><b>10-(Caen)</b> <b>LARIA</b> <b>Laboratoire d'Accueil pour la Recherche sur les ions Accélérés</b> Yannick Saintigny <b>IRCM /CEA/GANIL</b></p>	<p><b>Cf (Fontenay-aux-roses, CEA) IRCM</b></p>				
<p><b>11-(Caen et Rouen)</b> <b>ABTE EA4651</b> Pr François Sichel <b>Université de Normandie (Caen et Rouen)</b></p>	<p><b>2,4</b></p>	<p>Radiobiology, toxicology, genotoxicology, analytical chemistry, mitochondrial biology, oxidative stress</p>	<p>SR : 2 FTE Doc : 1 FTE Post-doc : 1 FTE</p> <p>HPLC-MS/MS, HPLC-UV array, fluorescence microscope,</p>	<ul style="list-style-type: none"> <li>• National : CRLCC F Baclesse, Caen Curie Institute, Orsay</li> </ul>	<ul style="list-style-type: none"> <li>• Etat</li> <li>• Europe,</li> <li>• Région Normandie</li> <li>• Cancéropôle Nord-Ouest</li> </ul>

		<p><b>Research in radiobiology:</b> Toxicity of radiotherapy on normal tissues (skin, lung, heart and vessels).</p>	<p>image analysis software, echograph.</p>		
<p><b>12-(Clermont-Ferrand) (hors LabEx PRIMES, cf plus loin)</b></p> <p><b>UMR 1240 INSERM IMoST : Imagerie Moléculaire et Stratégies Théranostiques</b></p> <p><b>Directrice :</b> D<sup>r</sup> E Miot-Noirault</p> <p><b>Directrice adjointe :</b> P<sup>r</sup> Frédérique Penault-Llorca</p> <p><b>Equipe 1 : Cibles et outils pour l'imagerie et la thérapie</b> D<sup>r</sup> F Degoul</p> <p><b>Equipe 2 : Recherche translationnelle en imagerie fonctionnelle, radiopharmaceutiques et biomarqueurs théranostiques</b> P<sup>r</sup> F Cachin</p> <p><b>UCA : Université Clermont Auvergne ; CRLCC Jean Perrin ; INSERM ; CHU Clermont Fd</b></p>	<p><b>1,2,3,4</b></p>	<ul style="list-style-type: none"> <li>• Targeted Radionuclide Therapy,</li> <li>• External radiation therapy,</li> <li>• Radiobiology, Dosimetry,</li> <li>• Metrology,</li> <li>• Chemistry, Radiochemistry.</li> </ul>	<p><b>20 FTE:</b> Senior researchers : 12 Doc : 7 Post-Doc : 1</p> <p><b>Specific Equipment</b> <u>Plateforme d'imagerie préclinique</u> : IVIA : PET, SPECT CT, imagerie de fluorescence et de bioluminescence, scanner X haute résolution, imagerie ex vivo, radiochimie, enceinte et automates de radiomarquage pour les isotopes gamma et beta+, Autoradiographie quantitative corps entier rongeurs, <u>Plateforme d'imagerie clinique</u> : <b>CIRMEN</b> : Centre d'Innovation et de recherche en Médecine Nucléaire : Radiopharmacie expérimentale dédiée au « first into humans » de radiopharmaceutiques PET-CT, SPECT-CT. Automates de synthèse et de radiomarquage, chambres radioprotégées</p>	<ul style="list-style-type: none"> <li>• <b>National :</b> IRCM - Montpellier UPS- Strasbourg ISA - Lyon LPC – Clermont Fd Cyclopharma-Clermont Fd Caminnov, Alès CLB – Lyon ILM – Lyon ISPB/UCBL – Lyon IPHC – Strasbourg UCBL – Lyon - EA3738 Institut de Cancérologie de L'Ouest, Nantes</li> </ul>	<p>UCA INSERM CRLCC Centre Jean Perrin Ligue Contre le Cancer INCA/PRTK CPER FEDER ANR</p>
<p><b>13-(Dijon)</b> <b>Radiobiology/Radiotherapy research team</b> <b>Céline Mirjolet</b> <b>Radiation Therapy Department, CRLCC</b> <b>G-F Leclerc</b></p>	<p><b>3</b></p>	<ul style="list-style-type: none"> <li>- Preclinical Development of 3D image guided radiotherapy</li> <li>-Nanoparticles for RT</li> <li>-RT schedule to improve Immunotherapy</li> <li>- Radiosensitivity predictive parameters</li> </ul>	<p><b>Constitution:</b> 2,1 FTE 1 radiobiologist 1 technician; 0,1 radio-physicists, + master student</p> <p><b>Specific equipment :</b> SARRP 3D (X-Strahl) with variable collimator</p>	<ul style="list-style-type: none"> <li>• <b>National</b> –netwo. RESPLANDIR –UMR 6303 CNRS, Equipe MaNaPi, Dijon –Le2i UMR CNRS 6306, Dijon –Lipide, nutrition, cancers UMR INSERM 866, Dijon –Lab Radiobiologie – EA3430, CRLCC P Strauss, Strasbourg –ICMUB UMR CNRS 6302, Dijon –EPHE, Immuno et Immunothér cancers, Dijon</li> </ul>	<p>Ligue contre le cancer Cancéropôle Grand est Conseil régional Bourgogne Franche Comté BPI Service Contract</p>

				–UTINAM UMR CNRS 6213, Besançon –Biotechs: Oncodesign	
<b>14-(Lille)</b> <b>Radiotherapy &amp; Medical physics Departments, CRLCC O. Lambret</b> Dr X Mirabel, T Lacornerie, Pr E Lartigau, Dr D Pasquier <b>(Lille)</b> <b>IEMN, UMR CNRS 8520</b>	4	MRI dosimetry	4 researchers  MRI 3T, 1.5 T Dosimetry	<ul style="list-style-type: none"> <li>• Institut J. Bordet,</li> <li>• Bruxelles,</li> </ul>	<ul style="list-style-type: none"> <li>• Physicancer</li> <li>• Siric ONCOLille</li> </ul>
	1	<u>NAMASTE</u> (Nanomaterials and Soft Matter Theory and Modeling)	3 researchers 1 doctorant Molecular and multi- cellular modeling	<ul style="list-style-type: none"> <li>• Small Systems Laboratory, U. Barcelona</li> <li>• Catholic Univ. Leuven</li> </ul>	<ul style="list-style-type: none"> <li>• CNRS</li> <li>• INSERM</li> <li>• Siric ONCOLille</li> </ul>
	3	<u>NanoBioInterfaces</u> , nanoparticles, nano compounds, graphene	4 FTE  SPR Spectroscopy Surface chemistry Nanoparticle synthesis		<ul style="list-style-type: none"> <li>• ANR Générique "SINCOLISTIN"</li> <li>• ANR PRCI "2DPS"</li> <li>• H2020-MSCA- RISE-2015</li> <li>• FLAG-ERA JTC 2015</li> <li>• INCa</li> <li>• CPER « Photonics for Society »</li> </ul>
	1,3	<u>AIMAN/LIA LICS</u> , « théranostique », imagerie médicale multimodale	6 researchers	<ul style="list-style-type: none"> <li>• Univ. of Illinois at Urbana-Champaign</li> <li>• Catholic Univ. Leuven Campus Kortrijk</li> </ul>	<ul style="list-style-type: none"> <li>• CNRS</li> <li>• Ecole Centrale Lille</li> </ul>
<b>15-(Lille)</b> <b>SMMIL-E</b> D. Collard <b>UMI CNRS 2820</b>	3	BioMEMS, microfluidiques and <i>Silicon nano tweezers</i> ( <i>SNT</i> ) pour la <i>biomécanique sous</i> <i>faisceau</i>	6 researchers	Institut des sciences Industrielles, Tokyo	<ul style="list-style-type: none"> <li>• CNRS</li> <li>• CPER IRICL</li> <li>• Centre Oscar Lambret</li> </ul>
<b>16-(Lille)</b> <b>Plasticity and Cancer »</b> X Le Bourhis <b>INSERM U908 « Cell</b>	2	Stem cells Preclinical models (Zebra, transgenic mice)	2 researchers		<ul style="list-style-type: none"> <li>• INSERM</li> <li>• Centre Oscar Lambret</li> </ul>
<b>17-(Lille)</b> « <b>Approches Génétiques »</b> <b>Fonctionnelles et Structurales des Cancers »</b> C Abbadie <b>CNRS UMR 8161</b>	2	Cellular senescence, Oxidative stress, DNA damage,	3.5 FTE researchers	<ul style="list-style-type: none"> <li>• Univ Ghent</li> <li>• Univ Libre de Bruxelles</li> </ul>	<ul style="list-style-type: none"> <li>• CNRS</li> <li>• Univ Lille</li> <li>• Institut Pasteur de Lille</li> <li>• Ligue contre le cancer</li> <li>• Siric ONCOLille</li> <li>• SFR Cancer</li> <li>• Cancéropôle Nord-Ouest</li> </ul>
<b>18-(Lille)</b> <b>CRISTAL UMR 9189</b> (Centre de Recherche en Informatique, Signal et Automatique de Lille)  Dr D. Pasquier	1,4	IA, big data, signal processing, MRI, quantitative imaging	Team: 5 seniors researchers; Docs and post docs: 3  CRISTAL UMR 9189:  Seniors: around 200  PhD Students: around	Cobra project: collaboration with 8 academic and industrial partners  D-Lab Maastricht Pr P. Lambin  MRI Linac french centers	INSERM CNRS ANR Canceropole Centre O. Lambret InterReg (european funding)

Academic Department of Radiation Oncology, Centre O. Lambret			150		Industrial
<p><b>19-(Lille)</b>  <b>Plateforme PRECI</b>  <a href="http://www.oncovet-clinical-research.com">www.oncovet-clinical-research.com</a>  <a href="http://www.plateforme-prec.fr">www.plateforme-prec.fr</a></p> <p>Dr Dominique TIERNY,  DVM, CEO</p> <p><b>OCR (Oncovet Clinical Research)</b></p> <p>OCR  Parc Eurasanté Lille Métropole  80 Rue du Docteur Yersin  59120 Loos - France</p>	2,3	<ul style="list-style-type: none"> <li>• <b>Comparative Oncology :</b>  Clinical studies in dogs with spontaneous tumors for accelerating therapeutic development in human health (in particular combination treatments with radiation)</li> <li>• <b>Radiotherapy Platform for research use.</b>  Dedicated housing facilities for rodents and large mammals with DDPP accreditation.</li> </ul>	<p><b>Team research radiotherapy : 8 FTE</b>  4 DVM, 1 ingeneer,2 technicians, 1 supervisor</p> <p><b>Specific Equipment</b> (accreditation ASN &amp; DDPP)  - Dual energy accelerator (Precise, Elekta, 6MV photons and electrons)  - 3D treatment planning software, Oncentra and Mosaiq, Elekta  - HDR Brachytherapy (microselectron-HDR)  - Low-energy photon unit  - Nuclear medicine service with gamma-camera  - CT scanner  - Fully equipped surgical theaters  - Housing facilities</p>	<p><b>National collaborations</b> with :  Lille University, Oscar Lambret anticancer center COL, Pasteur Institute, CNRS and INSERM teams :  Mixed team O'Dreams :  OCR- PRISM (Inserm U1192)</p> <p><b>International collaborations :</b>  Project CoBra approved (Nov 2017) : Interreg 2seas European Program (Lille University; COL, Oncovet-OCR, Delft University –NI, Portsmouth Hospitals NHS –UK,...)  <i>Aims to develop a new medical robot prototype for treatment of localized cancers by brachytherapy under guidance of MRI.</i></p>	<ul style="list-style-type: none"> <li>- Research contracts for biotechs and pharmaceuticals laboratories.</li> <li>- Innovative research program Immunodog (combination therapy : PRI BPI)</li> <li>- Application for collaborative research projects with academic teams : regional (Haut de France Region), national (FUI, ANR, INCa) and European funds (Interreg2 Seas)</li> </ul>
<p><b>20-(Lyon and Auvergne-Rhône-Alpes)</b>  <b>LabEx PRIMES</b>  Françoise Peyrin  8 teams</p>		<p><b>Physique, Radiobiologie, Imagerie Médicale et Simulations</b></p>	Federates 16 teams including 8 teams directly involved in preclinical research in radiotherapy		Each team has its own funding and the LabEx has specific ANR funding
<p><b>21-(PRIMES Lyon)</b>  <b>PRISME-LRCM</b>  <b>Development of fundamental and translational research in radiobiology for innovative radiotherapies</b>  Pr Claire Rodriguez-Lafrasse  <b>IPNL UMR5822 (CNRS/IN2P3, Univ Lyon1)</b>  Fac. de Médecine Lyon-Sud</p>	1,3	<ul style="list-style-type: none"> <li>• Radiobiology for innovative radiotherapies (cell response to carbon ions, protons and radiosensitizing nanoparticles)</li> <li>• Predictive biomarkers of response to radiotherapy in tumors and liquid biopsies (CTCs)</li> </ul>	<p><u>11 FTE:</u>  3 PU-PH, 1 Pr, 1 MCU-PH, 1 Engineer, 1 AHU, 3 Techs, 1 post-doc, 5 Doc. <u>Equipment</u> Xray Irradiator (XRad320), cell. and mol. biology (hypoxic chambers, video microscopy, Nanostring, NGS...), animal facilities</p>	<ul style="list-style-type: none"> <li>• <b>National :</b>  LabEx PRIMES, France Hadron.</li> <li>• <b>International :</b>  ENLIGHT, NIRS (Chiba, Japon), GSI (Germany) University of Montreal.</li> </ul>	IN2P3, Labex PRIMES, INCa, ANR, UCBL, CLARA, Ligue contre le cancer, EDF
<p><b>22-(PRIMES Lyon)</b>  <b>PRISME-PHABIO</b>  <b>Modelling and instrumentation for control and optimisation of innovative radiotherapies</b>  Pr Michaël Beuve  <b>IPNL-UMR5822 (CNRS/IN2P3, Univ Lyon 1)</b> Faculté des Sciences</p>	2,3,4	<ul style="list-style-type: none"> <li>• Radiobiology (experiments and multiscale modelling from atoms to tumor control),</li> <li>• Instrumentation  - for cell irradiation dosimetry  - for on-line control of treatments</li> </ul>	<p><u>7 FTE:</u>  1 Pr, 2 MCU, 1 CR, 1 Engineer, 1 Post-doc, 5 Doc.  <u>Equipment</u>  - Proton beam line;  - cell biology laboratory;  - instrumentation laboratory.</p>	<ul style="list-style-type: none"> <li>• <b>National :</b>  LabEx PRIMES, France Hadron, CIMAP</li> <li>• <b>International :</b>  ENLIGHT (UE) ; IFIR (Argentine) ; Univ. St Petersburg (Ru); Univ. Duisburg-Essen (D);</li> </ul>	IN2P3, Labex PRIMES, INCa, UCBL, FRM, Bourse P&M Curie

<b>23-(PRIMES Lyon) Tomoradio</b> Françoise Peyrin & David Sarrut <b>CREATIS team 4, UMR 5220 INSERM 1206</b> (CNRS, INSERM, Univ. Lyon 1, INSA-Lyon)	1,4	<b>Image processing,</b> tomographic reconstruction, registration and simulations in radiation therapy and nuclear medicine	2.5 FTE; 3 Doc; 4 Post-doc  Access to micro SPECT imaging and to the technical platform of the Lyon CRLCC	<ul style="list-style-type: none"> <li>• <u>National</u> Nantes Cancer center on XRad small animal irradiators France HADRON</li> <li>• <u>International</u> D. Sarrut is member of the ESTRO ACROP (Advisory Committee on Radiation Oncology Practice) ENLIGHT</li> </ul>	Univ.Lyon1, Labex PRIMES, INCa Physicancer SPEDIV, ANR tGATE, Lyric project (SIRIC INCa funds), FRM
<b>24-(PRIMES Lyon) SAARA</b> Behzad Shariat <b>LIRIS, Univ. Lyon 1</b>	1,4	<b>Moving organs</b> modeling (biomechanics)	2 pers, 1 FTE	<ul style="list-style-type: none"> <li>• <u>National</u> : LabEx PRIMES, France HADRON</li> <li>• <u>International</u> : ENLIGHT</li> </ul>	Labex PRIMES, Univ. Lyon 1, INSA, ANR
<b>25-(PRIMES Clermont-Ferrand) Department of Physics for Health, Environment and Energy</b> Gérard Montarou <b>LPC Clermont</b> CNRS/IN2P3 Univ. Clermont Auvergne (UCA)	2,4	<ul style="list-style-type: none"> <li>• <u>Particle Therapy:</u> instrumentation and simulation</li> <li>• <u>Radiobiology</u> : experimental and modeling</li> <li>• <u>Multiscale Dosimetry</u></li> <li>• <u>Multiscale simulation</u> of the radiation in cells and tissues</li> <li>• <u>Biomaterials:</u> elaboration and characterization</li> </ul>	<u>12,5 FTE</u> 8,5 Senior researchers; 3 Doc 1 Post-Doc  <u>Specific equipment:</u> <ul style="list-style-type: none"> <li>• X ray Irradiation facility (PXI XRAD320)</li> <li>• 2.4 MeV Neutron Tube (G16 SODERN)</li> <li>• TIRF Microscope (Eclipse Ti-E NIKON)</li> </ul>	<ul style="list-style-type: none"> <li>• <u>National</u> LabEx PRIMES, France HADRON</li> <li>• <u>International</u> H2020- European Nuclear Science and Application Research2 : MediNet OpenGATE coll. Geant4-DNA ENLIGHT</li> </ul>	<u>Recurrent resources:</u> – CNRS/IN2P3, – Univ. CA – Labex PRIMES <u>Research contract</u> – ANR, – INCa – CLARA <u>Regional fundings</u> on specific contract
<b>26-(PRIMES Grenoble) Rayonnement Synchrotron et Recherche Médicale ( RSRM) EA 7442</b> Pr Sam Bayat <b>Univ. Grenoble-Alpes</b>	1,2,3	<ul style="list-style-type: none"> <li>• In-vitro and in-vivo micro imaging,</li> <li>• Experimental synchrotron radiation therapy (SSRT, MRT),</li> <li>• Nanoparticle preclinical studies.</li> </ul>	9 pers, <u>5,5 FTE</u> , team located at ESRF/ID17	<ul style="list-style-type: none"> <li>• <u>National</u> : LabEx PRIMES, CEA</li> <li>• <u>International</u> : European MRT coll., Australian Synchro., Daegu Synchro. (Korea)</li> </ul>	Labex PRIMES, INCa/DGOS, UGA, FRM, Région AuRA
<b>27-(PRIMES Grenoble) SyMMES UMR5819</b> Jean-Luc Ravanat <b>CEA, CNRS, UGA</b>	2	Approches thérapeutiques ou diagnostiques innovantes par de nouvelles molécules ou biomolécules ou agents génotoxiques	8 pers.; <u>2,2 FTE</u>	LabEx PRIMES	Labex PRIMES, CEA segment radiobiology, INCa, UGA, ANSES, ANR
<b>28-(PRIMES Grenoble) ProMD</b> Serge Candéias <b>LCBM, UMR5249 CEA/CNRS/UGA</b>	1	<ul style="list-style-type: none"> <li>• Radiobiology;</li> <li>• Immunology;</li> <li>• Low dose effects</li> </ul>	4 pers., <u>2,8 FTE</u>	<ul style="list-style-type: none"> <li>• <u>National</u> : LabEx PRIMES, CEA</li> <li>• <u>International</u> : PHE (UK), UKER (D), SUT (Pol)</li> </ul>	Labex PRIMES, CEA segment radiobiology, EDF
<b>29-(PRIMES Grenoble) Physique pour les Applications Médicales</b> Denis Dauvergne <b>LPSC, UMR 5821, CNRS/IN2P3 UGA</b>	2,3,4	Detectors for online control of radiotherapy	14 pers., <u>5,8 FTE</u>	<ul style="list-style-type: none"> <li>• <u>National</u> : LabEx PRIMES, France HADRON</li> <li>• <u>International</u> : ENLIGHT</li> </ul>	LabEx PRIMES, IN2P3, INCa Physicancer CLARYS-UFT, UGA, CLARA

<b>30-(PRIMES Lyon)</b> <b>FENNEC</b> Olivier Tillement <b>ILM, UMR 5306</b>	<b>1,3</b>	Nanoparticles for radiosensitisation (from synthesis to clinical development)	7 pers., <u>3,5 FTE</u>	<ul style="list-style-type: none"> <li>• <u>National</u> : LabEx PRIMES, CHU de Grenoble, IGR, Institut Curie, LCAM Orsay</li> <li>• <u>International</u> : European network ITN Argent ; Mecanistic modelization, Queen's university Belfast; Harvard medical school; Stanford.</li> </ul>	ILM Lyon, LabEx PRIMES, Research contracts
<b>31-(Grenoble)</b> <b>Team COLL</b> <b>Institute for Advanced Biosciences</b> Jen Luc Coll <b>INSERM U1209 CNRS UMR5309 Univ Grenoble-Alpes</b> Collaborators : L Sancey, X Le Guevel, B Busser	<b>1,3</b>	<ul style="list-style-type: none"> <li>• High-Z/Gold nanoparticles</li> <li>• PDT activated by x-rays</li> <li>• Biodistribution's optimization and elimination process' elucidation</li> </ul> Delivery of Boron for AB-NCT	3,5 Senior researchers; Doc : 1 Post-doc : 2  <u>Small X irradiator (120kV)</u>	<ul style="list-style-type: none"> <li>• <u>National</u> : Grenoble RSRM/ILL/ESRF/CHU/CERMAV ; Dijon C Goze</li> <li>• <u>International</u> : K Butterworth, Queen's Univ. Irlande ; I Porras, Univ de Granada Spain</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional fundings (INSERM, CNRS)</li> <li>• Regional funding (NEPTUNE project)</li> </ul>
<b>32-(Lyon)</b> Group of P Pittet <b>INL: Institut de nanotechnologie de Lyon, UMR5270</b> Univ. Lyon 1 - INSA de Lyon - ECL - CPE - CNRS	<b>4</b>	<ul style="list-style-type: none"> <li>• <b>Instrumentation</b> for dosimetry and medical physics applications</li> </ul>	<u>4 FTE</u> (2 professors, 1 assistant professor and 1 research engineer)  Highly resolved point dosimeter (patented technology), Tomographic dosimetry (patent pending).	<ul style="list-style-type: none"> <li>• <u>National</u> : Medical physics department of HCL, CREATIS, TIMC-IMAG, IPNL</li> <li>• <u>International</u> : Dosilab AG (Swiss) Univ. Uppsala (Sweden)</li> </ul>	<ul style="list-style-type: none"> <li>• Ppartnership with Dosilab AG,</li> <li>• ANR TECSAN DoRGaN (finished in 2016)</li> <li>• ANR NEWLOC (generic call 2018 )</li> <li>• QASys project (physic cancer call 2018)</li> </ul>
<b>33-(Montpellier)</b> <b>Radiation Oncology Department - Montpellier Cancer Institute</b> Pr David Azria	<b>2,3,4</b>	<ul style="list-style-type: none"> <li>• Large-scale clinical translational studies on radiotoxicity biomarkers</li> <li>• Preclinical/clinical studies on new drug and radiotherapy combinations</li> <li>• Preclinical and clinical dosimetry</li> </ul>	6 linear accelerators 1 MRI accelerator <i>(ViewRay's MRIdian Linac system, ongoing implementation)</i>	<ul style="list-style-type: none"> <li>• <u>National</u> :  - UNICANCER group for translational research and development in radiation oncology (UNITRAD, Head D. Azria)  - Other national thematic networks (SFRO, GETUG, SFPM, ...)  - Regional Univ. Federation of Radiation Oncology (ICM and CHU of Nîmes)</li> <li>• <u>International</u> :  - European FP-7 Requite consortium  - International RadioGenomics consortium (RGC)  - Univ. of Arizona, Mount Sinaï Hospital of New-York (US)  - CHUV, Lausanne (Switzerland)</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional funding: INCa, DGOS</li> <li>• Charities: League against cancer, ARC Foundation, FRM</li> <li>• Industry contracts (Roche, Genentech, Novartis, Varian)</li> <li>• Territorial authorities: Montpellier Metropole "Health Capital", Occitanie Region</li> </ul>



<b>34-(Montpellier)</b> <b>Experimental radiotherapy platform – Montpellier Cancer Research Institute</b> Dr Muriel Brengues	<b>2,3</b>	<ul style="list-style-type: none"> <li>• Radiobiology studies on cells and animal models (whole body mice and subcutaneous grafted tumours)</li> </ul>	<b>4 FTE:</b> 1 senior researcher 2 engineers 1 physicist  <b>X-ray irradiator</b> (SARRP Lite Xenx - XStrahl)	<ul style="list-style-type: none"> <li>• <b>National :</b> - ITMO-Cancer PROUST network</li> <li>• <b>International :</b> - European FP-7 Requite consortium</li> <li>• <b>Industrial collaborations:</b> NovaGray, Varian</li> </ul>	<ul style="list-style-type: none"> <li>• SIRIC Montpellier Cancer</li> <li>• European Fund for regional development (FEDER)</li> <li>• ITMO Cancer</li> <li>• Others: GEFLUC, League against Cancer</li> <li>• Services provision to academics and private companies</li> </ul>
<b>35-(Montpellier)</b> <b>Micro-PET-CT imaging platform - Montpellier Cancer Research Institute</b> Dr Jean-Pierre Pouget  <i>(Emerging platform to be delivered by Q2 2018)</i>	<b>1</b>	<ul style="list-style-type: none"> <li>• Imaging of small animals and plants</li> </ul>	1 senior researcher 1 nuclear medicine physician 2 engineers 1 physicist  <b>Micro-PET-CT imaging system</b>	<ul style="list-style-type: none"> <li>• SIRIC Montpellier Cancer</li> <li>• BionanoMRI consortium (Montpellier University)</li> <li>• Others to come</li> </ul>	<ul style="list-style-type: none"> <li>• European Fund for regional development (FEDER)</li> <li>• ITMO Cancer</li> <li>• SIRIC Montpellier Cancer</li> </ul>
<b>36-Montpellier)</b> <b>Immunotargeting and radiobiology in oncology</b> Dr André Pèlerin	<b>2,3</b>	<ul style="list-style-type: none"> <li>• Correlation studies between lymphocyte apoptosis and radio-induced late toxicities</li> <li>• Radiotherapy Biologics associations</li> </ul>	3 senior researchers 1 PU-PH 1 MCU-PH 2 engineers 1 PhD student	<ul style="list-style-type: none"> <li>• <b>National</b> SIRIC Montpellier Cancer CEA (Fontenay-aux-roses)</li> <li>• <b>International</b> University of Leicester</li> </ul>	<ul style="list-style-type: none"> <li>• SIRIC Montpellier Cancer</li> <li>• Labex MablImprove</li> <li>• Plan Cancer (Proust)</li> <li>• GEFLUC</li> </ul>
<b>37-(Montpellier)</b> <b>Radiobiology and targeted radiotherapy</b> Dr Jean-Pierre Pouget	<b>1,3</b>	<ul style="list-style-type: none"> <li>• Radiobiology of targeted radiotherapy (ovarian and colorectal cancers)</li> <li>• Development of radiopharmaceuticals for theranostic approaches of ovarian cancer</li> </ul>	2 senior researchers 1 MCU 2 MCU-PH 1 PH 1.5 post-doc 2 PhD student  <ul style="list-style-type: none"> <li>• Specific equipment SPECT-CT/PET-CT</li> </ul>	<ul style="list-style-type: none"> <li>• <b>National</b> collaborations ONIRIS Nantes CRCT Toulouse IBMM Montpellier INSERM Clermont Ferrand</li> <li>• <b>International</b> Queen Mary University London NRG Petten Netherlands NECSA South Africa ITU Karlsruhe Germany</li> </ul>	<ul style="list-style-type: none"> <li>• Nordic Nanovector, Oslo Norway</li> <li>• Physicancer</li> <li>• SIRIC Montpellier</li> <li>• Labex MablImprove/ Labex Chemisyst</li> <li>• Others: Bionov, EDF, LNCC, Canceropole (CGSO), GEFLUC</li> </ul>
<b>38-(Montpellier)</b> <b>Cancer bioinformatics and systems biology</b> Pr Jacques Colinge	<b>1,4</b>	<ul style="list-style-type: none"> <li>• Methods of large-scale dataset analysis and systems biology applied to cancer research</li> <li>• Computational modeling program</li> </ul>	1 senior researcher 1 post-doc	<ul style="list-style-type: none"> <li>• SIRIC Montpellier Cancer</li> </ul>	<ul style="list-style-type: none"> <li>• ANR, INCa, ARC Foundation, SIRIC Montpellier Cancer</li> </ul>

		for personalized cancer radiotherapy			
<b>39-(Montpellier)</b> <b>Immunity and cancer</b> Dr Nathalie Bonnefoy	2,3	<ul style="list-style-type: none"> <li>Relationships between cancer and immune cells within the microenvironment</li> <li>Immune-based combined therapies (chemo-and radiotherapy)</li> <li>In vitro and in vivo preclinical syngenic tumour models (melanoma, fibrosarcoma, colon, breast, pancreatic, cervix cancer)</li> </ul>	2 senior researchers 1 PhD student 1 engineers  <ul style="list-style-type: none"> <li>Mass Cytometry and Imaging Mass Cytometry</li> </ul>	<ul style="list-style-type: none"> <li><b>National :</b> <ul style="list-style-type: none"> <li>CRCT Toulouse</li> <li>Labex IGO Nantes</li> <li>CHU Montpellier</li> </ul> </li> <li><b>Industrial collaborations:</b> <ul style="list-style-type: none"> <li>OREGABioteck</li> <li>InnatePharma</li> <li>Varian</li> <li>Roche</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>INCa, ITMO Cancer, ANR</li> <li>Labex MabImprove, SIRIC Montpellier, Canceropole GSO</li> <li>League against Cancer, GEFLUC, interregional clinical research program (API-K)</li> <li>Industry contracts (Roche, Varian Medical systems)</li> </ul>
<b>40-(Nancy ICL)</b> <b>IMOPA, Team 1, Group radiobiology</b>  Leaders: Guillaume Vogin & Isabelle Behm-Ansmant  Head: Bruno Charpentier <b>UMR 7365 CNRS-UL</b>	1,2	<ul style="list-style-type: none"> <li>RNA maturation and splicing</li> <li>RNP biogenesis and functions</li> <li>Epitranscriptomics</li> <li>Molecular radiation response (healthy tissues and tumors)</li> <li>Radiomics</li> </ul>	<u>Team 1</u> : 3PU, 3MCF, 1 MCU-PH, 4 senior researchers, 7 technicians, 5 Doc. <u>Group RB</u> : 1 MCU-PH, 1 senior researcher, 1 PhD st, 1 M2 st  <u>Platforms</u> : next generation high-throughput DNA-sequencing platform, Imaging Platform for Cell and Tissue analysis (IbiSA), Quality of Life and Cancer Platform, CIC-IT, Clinical Molecular PET Imaging Platform (NANCYCLOTEP)	<ul style="list-style-type: none"> <li><b>National</b>  Institut de Cancérologie de Lorraine  CHRU Nancy  IMOPA team 2, Nancy  CRAN-UL, Nancy  LORIA, UMR 7503 (CNRS – INRIA – UL)  IGBMC Strasbourg  U866 Inserm, Dijon</li> <li><b>International</b>  Maastricht Univ. (NL)  Liege Univ. (BE)  Luxembourg (LU)  Saarlandes Univ. (DE)  Mainz Univ. (DE)</li> </ul>	Ligue CCIR-GE Institut de Cancérologie de Lorraine PHRCi SFCE AFRETH EU (INTERREG)
<b>41-(Nantes)</b> <b>Nuclear oncology &amp; innovative radiopharmaceuticals</b> Michel Chérel <b>CRCINA: Nantes-Angers Cancer &amp; Immunology Research Center, UMR INSERM 1232</b> ERL 6001 Nantes University.  IRS UN 8 quai Moncouso F-44000 Nantes	1,2,4	Fundamental and translational research in: <ul style="list-style-type: none"> <li>Metabolic imaging (PET)</li> <li>Tumor targeting with innovative <math>\alpha</math>, <math>\beta</math>- et <math>\beta</math>+ radionuclides.</li> <li>Radiobiology (relationship between ionizing radiation and immune response)</li> <li>Quantitative imaging</li> </ul>	16 FTE + 10 Doc. and 2 post-docs  <b>Specific equipment:</b> Preclinical imaging platform : macroPET, macroSPECT, Mice and Rats : $\mu$ TEP/Scan and $\mu$ TEM/MR, Optical Animal facilities (in radioactive area) <b>Arronax</b> facilities :Time lapse microscopy, radiobiological platform	<ul style="list-style-type: none"> <li><b>Regional: ICO-CHU, CRCINA, CNRS</b> (Subatech, Ceisam), Oniris and Tumor targeting &amp; radiotherapies network of the CGO.</li> <li><b>National</b> : GDR CNRS ACCITH, Labex IRON &amp; IGO</li> <li><b>International:</b> ITU, Germany ; Immunomedics, USA,</li> </ul>	<b>recurrent resources</b> INSERM, CNRS, University of Nantes <b>research contract</b> INCa, ANR, Region Pays de La Loire, Ligue, CGO, <b>industrial grants</b> Atlab/Telix Pharma, Immunomedics,

		<ul style="list-style-type: none"> <li>• Dosimetry</li> <li>• Radiophysic</li> </ul>			Roche, Amgen, Siemens and Kéosys
<b>42-(Nice)</b> <b>TIRO laboratory</b> Thierry Pourcher & Béatrice Cambien <b>UMRE-4320, Nice</b> <a href="mailto:cambien@unicer.fr">cambien@unicer.fr</a>	3	<b>Translational research:</b> <ul style="list-style-type: none"> <li>• radio-sensitization</li> <li>• radioprotection, with multidisciplinary approaches (preclinical expertise from in vitro to in vivo, nuclear imaging and spectrometric platform).</li> </ul>	<u>14 FTE:</u> 4 senior researchers (INSERM, CNRS, CEA) 1 faculty researcher, 2 MD, 4 engineers /tech., 4 Doc., 1 Post-doc. <u>Specific equipment</u> micro SPECT/CT imaging, nuclear imaging and radioisotope handling, animal care facility, animal models, cellular biology, spectrometric platform. <u>Access to medical irradiators:</u> EBRT (Cyberknife, protontherapy: Medicyc 65 Mev, ProteusOne 235 MeV) in the Centre Antoine Lacassagne.	<ul style="list-style-type: none"> <li>• <u>National</u> IRSN; IRBA; CEA Saclay &amp; Cadarache ; CLCC Baclesse, Caen ; INRIA &amp; IPMC at Sophia Antipolis, Inserm (Nice).</li> <li>• <u>International</u> Colombia, Madrid, USA.</li> <li>• <u>Industrial</u> : Theraguix, Lyon.</li> </ul>	- CEA/PTTox, DRF impulsion - ANR PRIODAC - Cancéropôle Sud-Est - Plan Cancer ....
<b>(Paris, Ile de France)</b>					
<b>Institut Curie</b>					
<b>43-Institut Curie</b> <b>Department of medical physics;</b> Ludovic De Marzi <b>Institut Curie Paris – St. Cloud – Orsay</b>	1,4	<ul style="list-style-type: none"> <li>• Medical Physics and Engineering: measurements, models, calculations, procedures</li> </ul>	In total <u>2 FTE</u> shared among all medical physicists and engineers + in general 1-2 docs and/or post docs	<ul style="list-style-type: none"> <li>• <u>National</u> : CNRS, CEA,</li> <li>• <u>International</u> : IAEA</li> <li>• <u>Industrial</u> : Varian, IBA, Siemens, ...</li> </ul>	Institut Curie foundation, Migac, PhysiCancer, industrial contracts, European grants
<b>44-Institut Curie</b> <b>Department of radiation oncology;</b> Pr Gilles Créhange <b>Institut Curie Paris – St. Cloud – Orsay</b>	1,4	<ul style="list-style-type: none"> <li>• Modulation of radiation therapy parameters;</li> <li>• Combination therapy with systemic agents.</li> </ul>	In total <u>2.45 FTE</u> shared among all senior radiation oncologists: 3 as major occupation; 4 as minor occupation.	<ul style="list-style-type: none"> <li>• <u>National</u> : UNICANCER; GORTEC; GETUG</li> <li>• <u>International</u> : EORTC</li> </ul>	Institut Curie foundation
<b>45-Institut Curie</b> Marie Dutreix <b>Centre de Recherche, Orsay</b>	1,2,3	<ul style="list-style-type: none"> <li>• Preclinical models, normal and tumor tissue differential index</li> <li>• FLASH irradiation (high dose rate irradiation)</li> <li>• Protons</li> <li>• Development of new radiosensitising molecules</li> <li>• Preclinical studies on combined treatments</li> <li>• Biomarkers</li> </ul>	<u>5 teams</u> 7 senior researchers, 3 post-doc, 4 doc, 8 engineers, technicians	<ul style="list-style-type: none"> <li>• <u>National</u>. F. Lemoine, CHU Salpêtrière, Paris ; E. Charafe, IPC, Marseille NANOTHERAD network</li> <li>• <u>European</u>: ITN-RADIATE R. Michel, University, Oxford, UK; P. Lambin et al., Maastricht, NL ; Cordes, Dresden, D; V. Gregoire, P. Sonveaux, Brussel ; V. Jendrossek, Essen, D.</li> <li>• <u>USA</u>: S. Bhaskara, Huntsman Cancer Center, Utah, USA</li> </ul>	Institut Curie foundation, INSERM, CNRS, Institut Curie centre de recherche, Univ. Paris-Saclay, INCA, Onxeo, EU

<p><b>DNA Repair, radiations and innovative cancer therapies,</b> Marie Dutreix, UMR3347/U1021</p>	<p>2,3</p>	<ul style="list-style-type: none"> <li>FLASH radiotherapy</li> <li>DNA repair inhibitors</li> </ul>	<p>3 researchers 1 post-doc 2 doc 3 technician</p> <p>Electron-FLASH Linac SIT Proton IBA SARPP Xrad500</p>	<p>International <b>EMPIR</b> <b>INSPIR</b> <b>ITN-Radiate</b> <b>ANR-Astrolabe</b></p> <p>Industrial <b>VARIAN</b> <b>SIT</b> <b>ONXEO</b></p>	<p>INSERM CNRS University Paris-Saclay Institut Curie</p>
<p><b>New Approaches in Radiotherapy,</b> Yolanda Prezado, UMR3347/U1021 <b>IMNC : Imagerie et Modélisation pour la Neurobiologie et la Cancérologie</b> CNRS, Univ. Paris VII et Paris XI</p>	<p>2, 3</p>	<ul style="list-style-type: none"> <li>Medical Physics (Experimental dosimetry, Monte Carlo simulations)</li> <li>Radiobiology (in vivo studies)</li> </ul> <p>Development of new strategies in RT using the <b>spatial fractionation of the dose</b></p>	<p>2 seniors, 2 post-doc fellows, 1 PhD student.</p>	<ul style="list-style-type: none"> <li><b>National :</b> <ul style="list-style-type: none"> <li>ICPO (Institut Curie)</li> <li>RadExp (Institut Curie)</li> <li>IR4M (Paris Sud)</li> <li>Human path and animal models (Institut. Pasteur)</li> <li>Institut Neurosciences Paris Saclay</li> <li>LOA</li> </ul> </li> <li><b>International :</b> <ul style="list-style-type: none"> <li>ALBA synchrotron</li> <li>Centro nacional de Microelectronica</li> <li>Univ. de Santiago de Compostela</li> <li>Hospital Clinico de Santiago (Spain)</li> <li>HIMAC (Japan)</li> </ul> </li> <li>Univ. medicin Berlin</li> </ul>	<p>Contracts (see collaborations)</p> <ul style="list-style-type: none"> <li>CNRS</li> <li>ERC</li> </ul>
<p><b>46-Institut Curie RadeXp</b> (Experimental Radiotherapy Platform), Translational Research Department Frédéric Pouzoulet <b>Centre de Recherche, Orsay</b></p>	<p>1,2,3,4</p>	<p>Translational research Medical physics Radiotherapy Preclinical models</p>	<p><u>Staff permanent position:</u> 1 radiation biologist 1 Medical physicist 3 engineers</p> <p><u>Specific equipment:</u> - XRAD320(X-rays) - SARRP (Xrays + imaging + TPS) - CIXD (double x-rays) - GSRD1 (<sup>137</sup>Cs) - KINETRON (HDR Linac) - Medical proton beamline (ICPO)</p>	<ul style="list-style-type: none"> <li><b>National:</b> RESPLANDIR network Y Prezado (IMNC/IN2P3) C Laurent (ToxEMAC ABTE, univ. Caen) Khe Hoang-Xuan (ICM/APHP)</li> <li><b>International :</b> F Lebrin (Leiden univ. medical center, NL) Han Tun (Mayo Clinic, Jacksonville, FL, USA)</li> </ul>	<p><u>Recurrent resources</u> – Invoicing – institutional <u>Research contract</u> – INCA (PRT-K, canceropole IDF2016) – ITMO Cancer (2015 regional funding) <u>And 4 Industrial contracts</u></p>
<p><b>AP-HP</b></p>					
<p><b>47-GRRAP Member: Recombinaison DNA repair and cancer: “de la molécule au patient”</b> Marie Dutreix <b>Inserm U1021 / CNRS UMR3347,</b> Orsay Assoc. GRRAP member: Laurent Quéro</p>	<p>3</p>	<ul style="list-style-type: none"> <li>DNA repair</li> <li>Anticancer drugs combination</li> <li>Translational research</li> </ul>	<p><u>6,5 FTE:</u> 3 Seniors researchers 1 Professor 2 Doc 1 Post Doc</p>	<p>Pharma Industry Paris VI university</p>	<p>Institut Curie CNRS INCa</p>
<p><b>48-GRRAP Member: Recherches en Hématologie</b></p>	<p>2,3</p>	<ul style="list-style-type: none"> <li>Tumors immunology</li> <li>HLA-G and immune checkpoints</li> </ul>	<p><u>6,5 FTE:</u> 5 Seniors researchers 3 Prof. and Assoc. Prof.</p>	<p>IUH Paris VII HLA-G working group</p>	<p>CEA Univ. Paris 7 Pharma Industry</p>

Edgardo Carosella, <b>CEA/SRHI</b> , Assoc. GRRAP member: Pr Ch. Hennequin Univ. & AP-HP St Louis				(international)	
<b>49-GRRAP Member: IMRB</b> Alexandre de La Taille <b>INSERM 955 EQ 07</b> Univ. Paris Est Créteil Assoc. GRRAP member: Pr Yazid Belkacemi Department of radiation oncology and Breast Center CHU AP-HP H. Mondor	<b>2,3</b>	<b>Microenvironment and biopathologic markers:</b> - Predictive factors for efficacy of chemo- radiotherapy in triple negative breast cancers; - Biological markers of severe RT toxicity. Proust project	<b>6 FTE:</b> 4 Seniors researchers 3 Professors 1 Assistant Professor	<ul style="list-style-type: none"> <li>• <b>National :</b> Pathology lab of CRLCC Clermont-Fd INSERM Montpellier INSERM Lyon Univ. Paris Est Créteil</li> </ul>	INSERM, INCa grant (Proust project)
<b>50-GRRAP Member: Cancer biology and therapeutics</b> Annette Larsen <b>Centre de Recherche Saint-Antoine UMR_S 938 – INSERM</b> Univ. P et Marie Curie Assoc. GRRAP member: Pr Florence Hugué Depart. Radiation Oncol, CHU AP-HP Tenon	<b>2,3</b>	Mechanisms driving of tumor progression and plasticity to identify novel targets and biomarkers of response to novel agents and combinations	<b>15 FTE:</b> 3 Seniors researchers 1 Professors 10 University-associated clinicians 6 Doc. 3 Post-doc	<ul style="list-style-type: none"> <li>• <b>National :</b> UPMC</li> <li>• <b>International :</b> - EU network of excellence - EORTC-PAMM - National University of Singapore - French-Brazilian univ. research network (CAPES- COFECUB)</li> <li>• <b>Industrial pharma:</b> - Europe, USA, China</li> </ul>	Univ. Paris VI INSERM Grants
<b>51-GRRAP Member: Personalized medicine, pharmacogenomics, therapeutic optimisation</b> Pr Pierre Laurent-Puig <b>INSERM UMR-S 1147 :</b> Univ. Paris Descartes Assoc. GRRAP member: Pr Florence Hugué Depart. Radiation Oncol, CHU AP-HP Tenon	<b>3</b>	<ul style="list-style-type: none"> <li>• <b>Pharmacogenetic</b> -metabolism and drugs transporters -intra-tumoral metabolism of pro- drugs - nucl. gene transfer</li> <li>• <b>Molecular mechanisms of cytotoxicity</b></li> <li>• <b>Tu. pharmacogenomics</b> prediction / monitoring of response and prognosis</li> </ul>	<b>14 FTE:</b> 2 Seniors researchers 1 Professors 10 University-associated clinicians 5 Doc. 4 Post-doc	<ul style="list-style-type: none"> <li>• <b>National :</b> CICB Paris CARPEM Paris V Paris VI UPMC</li> </ul>	Univ. Paris V INSERM Grants Emergence grant (RADON project)
<b>52-GRRAP Member Department of radiation oncology and Breast Center</b> Pr Yazid Belkacemi <b>CHU AP-HP H. Mondor INSERM 955 EQ 07</b> Univ. Paris Est Créteil	<b>1</b>	Target volumes imaging by PET-MRI	<b>2.5 FTE:</b> 1 Assistant professor 2 Senior researchers	<ul style="list-style-type: none"> <li>• <b>Local:</b> - Dept. Nuclear Medicine E Itti - Dept. Medical Imaging A Luciani</li> </ul>	Univ. Paris Est Créteil INSERM
<b>53-GRRAP Member Radiotherapy Department</b> Pr Philippe Maingon <b>CHU AP-HP Pitié- Salpêtrière</b>	<b>1,4</b>	<ul style="list-style-type: none"> <li>• PET-MRI in whole- body oncology imaging</li> <li>• MRI evaluation in the Linac-MR concept.</li> </ul>	<b>2.5 FTE</b> senior researchers	<ul style="list-style-type: none"> <li>• <b>Local:</b> Lab. of parametric imaging (LIP) UMR 7623 CNRS/Univ Paris VI</li> </ul>	CNRS

<p><b>54-TEAM 02 “In Vivo Imaging Research”</b>  Bertrand Tavitian  Laure Fournier  Charles-André Cuenod  Olivier Clemend  Philippe Halimi  Philippe Giraud  <b>Inserm UMR-970 Paris Cardiovascular Research Center</b></p>	<p><b>1</b></p>	<p>Target volume definition, MRI, PET-CT</p>	<p>Team: <u>16 FTE</u>  5 PU-PH  1 PH  1 Post-Doc  8 Doc  4 engineers</p> <p><u>Equipment:</u>  Small animal PET-CT  Small animal 4.7T MRI</p>	<p>• <u>National</u> :  Inst. Langevin, Inst. Cochin, Odontology school, Biomedical Faculty, INRA Toulouse, INSERM 1146, MSC lab (lab. matières et systèmes complexes, UMR 7057 CNRS, Univ. Paris-Diderot.); lab. biosurgical sciences (INSERM U633)</p> <p>• <u>International</u> :  TRANSACT consortium (EU);  Argentina (D Craeim, Favaro Univ., ECOS grant).  Univ. Federal do Rio Grande do Norte in Natal, Brazil (Pr. I. Araujo Filho).</p>	<p><u>National:</u>  BIMUPET, Plan Cancer; HECAM; CARPEM; SIRIC InCA; PETRUS; France Life Imaging; RIHDO; FUI; RADIOMICS (FRM)</p> <p><u>European:</u>  ENCITE, UE FP7;</p> <p><u>Industrial contracts.</u></p>
<p><b>55- Service de radiothérapie HEGP</b>  Dr Jean-Emmanuel Bibault  Pr Philippe Giraud  Pr Catherine Durdux  Pr Anita Burgun  <b>Hôpital Européen Georges Pompidou – AP-HP</b></p>	<p><b>1,4</b></p>	<ul style="list-style-type: none"> <li>Intensity Modulated Radiation Therapy,</li> <li>Stereotactical Body Radiation Therapy,</li> <li>Gating</li> </ul>	<p>9 physicians including three full time Professors</p>	<p>INSERM UMRS 1138 Team 22  – Centre de recherche des Cordeliers  – Anita Burgun Radiomics, Machine Learning, Big Data</p>	<p>BPI : Invest Public Bank</p>
<p><b>56-(Paris AP-HP) Laboratory of Integrative Cancer Immunology,</b>  Jérôme Galon <b>INSERM UMRS1138</b>, (INSERM, HEGP, AP-HP) Paris,</p>	<p><b>3</b></p>	<ul style="list-style-type: none"> <li>Immunology, tumor-immunology, immune response to cancer, immunotherapy,</li> <li>impact of radiotherapy on immune microenvironment, defined the concept of immune contexture, and the Immunoscore.</li> </ul>	<p>2.5 FTE senior researchers ;  2 Doc;  6 Post-Doc</p>	<p>• <u>Local:</u>  Radiotherapy department, IGR, Villejuif, immune response after radiotherapy ± immunotherapy.</p> <p>• <u>Multiple International collaborations</u>  PI of the Worldwide Immunoscore consortium</p>	<p>Recurrent resources (INSERM laboratory, LabEx immunology)</p> <p>Co-funding from EU (ERAnet Transcan and APERIM);</p>
<p><b>57-(Paris) LIMP Laboratoire d’Imagerie Moléculaire Positronique (UMS28</b>  phénotypage du petit animal)</p> <p>Aurélie Prignon</p> <p>Sorbonne Université, Paris</p>	<p><b>1,4</b></p>	<ul style="list-style-type: none"> <li>Preclinical tumor models</li> <li>Evaluation of novel PET probes using radionuclides as 18F, 68Ga, (177Lu in preparation)</li> <li>In vivo and ex vivo dosimetry</li> </ul>	<p>1 engineer  1 doc  Equipment:  Small animal PET/CT and Animal facilities (in radioactive area)  Specific equipment for radiochemistry (Fluor-18 and gallium-68) and quality control  Gamma counters</p>	<p>SIRIC CURAMUS (Sorbonne Université)  APHP Nuclear medicine Tenon hospital  France Life Imaging ICMUB UMR CNRS 6302, Dijon</p> <p>•</p>	<p>Inserm and Sorbonne University, research contract: Edinburg Molecular Imaging,</p>
<p><b>58-(Villejuif) Molecular radiotherapy</b>  Pr Eric Deutsch  <b>INSERM 1030</b> Gustave Roussy (IGR)</p>	<p><b>1,2,3</b></p>	<ul style="list-style-type: none"> <li>Preclinical models, normal and tumor tissue differential index, Lung and</li> </ul>	<p>2 senior researchers, 6 doc., 4 post-docs</p>	<p>• <u>Nationale:</u>  - Ecole central Paris,  - LOA école polytech.,  - Dosisoft, IRSN, CEA,</p>	<p>INSERM, FRM, Ligue contre le cancer, ARC, EDF, INCA.</p>

		<p>head and neck models</p> <ul style="list-style-type: none"> <li>• Radiomics and functional imaging</li> <li>• Biomarkers</li> <li>• Immunotherapies combined to radiotherapy</li> </ul>		<ul style="list-style-type: none"> <li>- A Boissonnas UPMC-INSERM,</li> <li>- P Sansonetti Institut Pasteur,</li> <li>- I Buvat, SHFJ CEA Orsay.</li> <li>- J Galon U1138 (immunology)</li> </ul>	NanoH, Nanobiotix, + pharma
<p><b>59-(Villejuif)</b> <b>Cell death and aging</b> Jean Luc Perfettini <b>INSERM 1030, IGR</b></p>	2,3	Cell death, immune response	2 senior researchers, 6 doc., 3 post-docs	CEA, IRSN	INSERM, Labex Lermit, INCA, ARC, EDF
<p><b>60-(Villejuif)</b> <b>Espèces Réactives de l'Oxygène et Radio carcinogénèse</b> Corinne Dupuy, <b>UMR 8200, IGR</b></p>	2	<ul style="list-style-type: none"> <li>• Radiation induced fibrosis, Free radicals,</li> <li>• Carcinogenesis and X-ray induced mutagenesis</li> </ul>	1 senior researchers, 2 doc., 2 post-docs	INSERM U1030	CNRS, INCA, EDF
<p><b>61-(Villejuif)</b> <b>Epidémiologie des radiations,</b> Florent de Vathaire, <b>U1018, IGR</b></p>	2,4	Dose modelling and cancer risk	2 senior researchers, 2 doc., 3 post-docs		INSERM, INCA, H2020,
<p><b>62-(Villejuif)</b> <b>Dosimetry Platform,</b> Ibrahima Diallo, <b>U1018-CESP, IGR</b></p>	4	<ul style="list-style-type: none"> <li>• Dosimetry for late effects studies</li> <li>• Out-of-field dose measurements and modelling</li> <li>• Organ modelling</li> <li>• RT patient phantom development</li> <li>• QA of late effects dosimetric studies</li> </ul>	<p><b>Constitution</b></p> <ul style="list-style-type: none"> <li>• 2 Principal investigators.</li> <li>• 1 ETP postdoc</li> <li>• 1 ETP MD</li> <li>• 1 Master II student</li> <li>• 1 Master I student</li> </ul> <p><b>Specific equipment</b></p> <ul style="list-style-type: none"> <li>• Library of whole body of phantoms for paediatric and adult RT patients.</li> <li>• Software for whole body dose calculations.</li> <li>• Radiophotoluminescence (RPL) dosimetry system.</li> <li>• Specially dedicated water tank for out-of-field dosimetry.</li> </ul>	<p><b>National</b></p> <p>Gustave Roussy, Villejuif Curie Institute, Paris Dosisoft, Cachan Equal-Estro, Villejuif Centre G.F. Leclerc, Dijon Centre L. Bérard, Lyon ICL, Nancy</p> <p><b>International</b></p> <p>Univ. of Birmingham, UK NKI, The Netherlands ISGLOBAL, Spain MD Anderson Cancer Center, USA</p>	INSERM Plan Cancer Inca Dutch Cancer Society European Commission
<p><b>63-(Villejuif)</b> <b>Medical Physics Department, IGR</b> Dimitrios Lefkopoulos</p>	4	Medical Physics and Engineering : Radiation metrology, Adaptive planning and dosimetry, target deformation Dose modelling, Quality assurance, transit dosimetry.	<p><b>Constitution</b></p> <ul style="list-style-type: none"> <li>• 1.5 FTE Medical Physicists</li> <li>• 1 ETP QA technologists</li> <li>• 2 Master/year</li> <li>• 1-2 docs and/or post docs</li> </ul> <p><b>Specific equipment</b></p> <ul style="list-style-type: none"> <li>• High level technological platform</li> </ul>	<p><b>National</b></p> <p>INSERM, Villejuif Curie Institute, Paris Dosisoft, Cachan Equal-Estro, Villejuif Raysearch ELEKTA</p> <p><b>International</b></p> <p>IAEA</p>	INSERM Plan Cancer Inca European Commission


		Quantification and patient dosimetry in medical imaging.	<ul style="list-style-type: none"> <li>• TPS VOLO Tomotherapy</li> <li>• TPS PRECISION CyBerknife</li> <li>• TPS Raystation (VMAT)</li> <li>• 10 Linacs</li> <li>• Brachy dedicated TPS.</li> <li>• PLANETDose (Targeted Radionuclide Therapy)</li> </ul>		
<b>64-(Fontenay-aux-roses, CEA)</b> <b>Institut de radiobiologie cellulaire et moléculaire iRCM,</b> Paul-Henri Romeo 14 teams: <b>LRIG:</b> Pablo Radicella <b>LION:</b> Karine Dubrana <b>LTR:</b> Stéphane Marcand <b>LRGM:</b> Eric Coïc <b>LRP:</b> François Boussin <b>LREV:</b> Pascale Bertrand <b>LGAG:</b> Isabelle Allemand <b>LDG:</b> Gabriel Livera <b>LSHL:</b> Françoise Pflumio <b>LRTS:</b> Paul-Henri Romeo <b>LGRK (Evry):</b> Michèle Martin <b>LCE:</b> Sylvie Chevillard <b>LRT:</b> Jaime Angulo <b>LARIA (Caen):</b> Yannick Saintigny  CEA, Direction de la Recherche Fondamentale	1,2,3	<b>Radiobiology Radiotherapy Individual sensitivity to irradiation</b>	86 Full time researchers 35Technicians 29 Doc 20 Post Doc  <u>Specific Equipment</u> : iRCM Platform equipments <ul style="list-style-type: none"> <li>• SARRP (small animals radiation research platform) XRray generator with CBTC (cone beam computed tomography)</li> <li>• GSRD 1: source of Cesium 137</li> <li>• Irradiateur X Rec-Hadron et plateforme d'irradiation par ions accélérés du GANIL (CIRIL)</li> </ul>	<ul style="list-style-type: none"> <li>• <u>National</u> collaborations through several ANR and Inca programs</li> <li>• <u>International</u> collaborations Japan, EU, USA</li> <li>• <u>Industrial</u> collaborations AREVA, EDF</li> </ul>	2017 Recurrent :  Logistic : 1,8 M€  Contracts : 3 M€  Platforms : 0,75 M€
<b>65-(Fontenay-aux-roses, CEA, suite)</b> <b>PROCyTox,</b> Michelle Ricoul <b>Scientific director :</b> Laure Sabatier <b>CEA/Paris-Saclay Fontenay-aux-Roses</b>	2	<ul style="list-style-type: none"> <li>• New approaches in molecular cytogenetics including telomere length measurements.</li> <li>• Biological dosimetry with cytogenetics biomarkers.</li> <li>• International intercomparison exercises for dose estimate.</li> </ul>	<u>4,2 FTE:</u> 1,2 researchers, 2 technicians, 1 Post-doc <u>Specific equipment</u> cellular and molecular cytogenetics, image analysis with Metasystems set-up. <u>PROCyTox acts as a platform</u> for characterization of genotoxic damages.	<ul style="list-style-type: none"> <li>• <u>National</u>  - Neurospin, Saclay  - Joliot/SPI/ LERI Saclay  - CEA/BIG/Grenoble  - IGR Radiotherapy  - INSERM Nantes</li> <li>• <u>International</u>  - RENEB Network (17 labs all around Europe)  - SUBI (South Ural)</li> </ul>	-CEA ( 3,2 FTE) -EC-Eurotalents (1 Post-doc) - NRBC-E -EC- EJP-CONCERT (Radiation Protection) -External resources coming from platform activities.
<b>(Fontenay-aux-rose) IRSN</b>					
<b>66-Laboratoire de Dosimétrie des Rayonnements Ionisants (LDRI)</b> Carmen Villagrassa, PhD,	2,3,4	<b>External dosimetry:</b> micro/nano-dosimetry, dosimetry for medical applications	5.5 FTE researchers + 3 doc. students. <u>Equipment:</u> Medical Linear accelerator, Metrological photon and	EURADOS members, Geant4-DNA/Geant4 collaboration, European project MEDIRAD, EURAMED, EURAMET	IRSN recurrent resources; EU



IRSN, Fontenay			beta calibration laboratory, ESR spectrometers. OSL/TLD dosimetry capabilities; Calculation cluster		
<b>67-Laboratoire of Radiobiologie des expositions médicales (LRMed)</b> Fabien Milliat, PhD IRSN, Fontenay	1,2,3	<b>Normal tissue response</b> to cancer treatment, therapeutic approaches to treat severe radiation injury	8 FTE researchers + 4 FTE technical support+ 4 Doc. students <u>Equipment:</u> Small Animal radiation Research Platform (SARRP, X-Strahl)	INSERM U1030 Gustave Roussy, Centre de Recherche sur l'inflammation Bichat, CDR Saint Antoine, INSERM UMR 1229 Nantes, INSERM U1180 Faculté de Pharmacie	IRSN recurrent resources; INCa, ANR
<b>68-Laboratoire d'évaluation de la dose interne (LEDI)</b> David Broggio, PhD IRSN, Fontenay	3	<b>Internal dosimetry,</b> medical physics, computational human phantoms development	2.5 FTE researchers + 2 Doc. students <u>Equipment:</u> TPS for external and internal dosimetry, calculation clusters	OpenDose, Claudius Regaud Hospital (Toulouse), EURADDOS members, EU-CONCERT.	IRSN recurrent resources; EU
<b>69-Unité d'expertise medicale</b> Cécile Etard IRSN, Fontenay	4	Medical Physics, Radiation protection in medical field, lessons learned for incidents / accidents in radiotherapy	5 equivalent full time medical physicists + 1 equivalent full time radiation protection engineer	<u>National</u> collaboration with UNICANCER (training) <u>International</u> Member of advisory board of EUCLID EU Project	IRSN recurrent resources; EU
<b>70-Laboratoire de micro-irradiation, de métrologie et de dosimétrie neutrons (LMDN)</b> Jean Marc Such, PhD IRSN, Cadarache	2,3,4	<b>Micro-irradiation</b>	1.4 FTE researchers + 0.6 FTE technician <u>Equipment:</u> Micro-beam for heavy particles (MIRCOM)	CENBG (Bordeaux)	IRSN recurrent resources;
<b>71-(Saclay / CEA)</b> 3 teams and 1 experimental platform:  <b>LM2S</b> : modelling and simulation systems laboratory, Dephine Lazaro  <b>LMD</b> : dose metrology laboratory, Valentin Blideanu  <b>LSOC</b> : Oxydative Stress & Cancer laboratory Carl Mann  <b>DOSEO Platform,</b> Bénédicte Poumarède <a href="http://www.plateformedo seo.com/en/">http://www.plateformedo seo.com/en/</a>	2,4	<b>Dose modelling</b> Monte Carlo simulations (PENELOPE, MCNP, EGSnrc, GATE) for radiotherapy, associated imaging (kV- and MV-imaging, radiology), out-of-field dose, QA using EPIDs, TPS quality control. <b>Statistical methods and nonparametric approaches</b> radiotherapy, PET, radiomics <b>Metrology for ionizing radiation</b> (LNHB primary laboratory "Laboratoire National Henri Becquerel") <b>Instrumentation</b> : diamond technology	22 FTE researchers 1 doc; 3 post doc  <b>Specific Equipment</b> : DOSEO Platform equipments • 1 Elekta LINAC "Versa HD" • 1 Varian Linac "Truebeam" • 1 GE CTscan "DT 750 HD Discovery" • Brachytherapy projector with <sup>60</sup> Co and <sup>192</sup> Ir • 1 <sup>60</sup> Co irradiator	• <u>National</u> : several ANR and Physicancer projects (clinical centers (IGR, Curie Institute, CLCC, ...), CEA/SHFJ, CEA/IRCM • <u>International</u> BIPM, European metrological centers • <u>Industrial</u> : AQUILAB, RTC, DOSISFOT, ELEKTA	CEA recurrent : 1,2 M€  Contracts : 1,4 M€

CEA, Direction de la recherche technologique		and OSL dosimeters primary and secondary metrology, expertise in commercial use of dosimeters. <b>Experimental measurements:</b> dose, in vivo dosimetry.			
<b>72-(Palaiseau, X)</b> <b>Laboratoire d'Optique Appliquée (LOA), team SAPHIR,</b> Alessandro Flacco,  <b>CNRS-7639, ENSTA-PARISTECH, Ecole Polytechnique</b>	<b>2,3,4</b>	<ul style="list-style-type: none"> <li>• Protons acceleration by ultra-intense laser plasma technology,</li> <li>• Radiobiology of pulsed protons: <b>short pulse (ns) &amp; ultra-high dose rates (<math>10^8\text{Gy/s}</math>) in vitro (in vivo coming)</b></li> </ul>	<b>4 FTE:</b> 2 senior researchers (1 physicist, 1 radiobiologist), 1 Doc 1 engineer <u>SAHIR Laser facility:</u> pulsed protons (electrons and X ray coming) <u>Cell culture lab</u>	<ul style="list-style-type: none"> <li>• <u>National</u> : U1030-IGR (E.Deutsch), ISMO (S.Lacombe), ICPO, CEA (IRAMIS) IRS Nanotherad Network Amplitude Technologies</li> <li>• <u>International</u> : Helmholtz-Zentrum Dresden-Rossendorf (D) Weizmann Institute (Is) CHUV (CH)</li> </ul>	CNRS, ENSTA, Ecole Polytechnique, IRS Nanotherad, EDF
<b>73-(Orsay)</b> <b>Nom : PRAZERES Rui</b> <b>Projet : ESCULAP</b> <b>Labo. : LCP/CLIO</b> <b>Bât.201P2</b> <b>Université Paris-Sud</b> <b>91405 Orsay cedex</b>	<b>2, 4</b>	• Production de pulses d'électrons de haute énergie (>200MeV) et durée femtoseconde	½ senior researcher	• CNRS & Université Paris Saclay : LAL, LPGP, LCP	• CNRS
<b>74-(Brétigny s/ Orge)</b> <b>IRBA</b>  <b>Pôle NRBC - DEBR/RAD (Dépt. Effets biologiques des rayonnements, unité RADIologie)</b> Dr Michel DROUET  <b>DAR/SCR (Division Appui à la Recherche-Sce Compétent radioprotec.)</b> Dr Patrick Martigne  <b>IRBA (Institut de Recherche Biomédicale des Armées)</b>	<b>3</b>	<ul style="list-style-type: none"> <li>• Diagnostic/Pronostic des irradiations (Dosi. bio. cytogénétique et biomarqueurs),</li> <li>• Prophylaxie des RI (radioprotecteurs et radiomitigateurs),</li> <li>• Thérapeutique: <ul style="list-style-type: none"> <li>- irradiation globale (cytokine et facteurs de croissance)</li> <li>- localisée (R&amp;D thérapie cellulaire et génique)</li> </ul> </li> </ul>	<b>11,5 FTE:</b> 8 chercheurs (dont 3 militaires), 1 radiothérapeute (IGR/IRBA) 3 techniciens. <u>Équipement</u> : irradiateur $^{60}\text{Co}$ (IRDI 4000); X auto-protégé (SARRP, Culture cellulaire, Microscopes motorisé, comptage automatisé (MetaSystems, Biodosimetry), Modèles animaux, <u>Plateformes mutualisées</u> de BM, histologie, RMN liquide/HRMAS, microscopie photon./électro. etc.	<ul style="list-style-type: none"> <li>• <u>National</u> : Institut Curie (plateforme RadeXp), IGR, CEA, IRSN, Inserm Lyon (N. Foray) etc.,</li> <li>• <u>International</u> : Bundeswehr, réseau OTAN dont l'AFRRI (USA)...</li> <li>• <u>Industrial</u> : (start-up Acubens, MEDESISPharma, ...)</li> </ul>	DGA (programme Biomedef spécifique au Service de Santé des Armées), DGCIS (projets RAPID ou ASTRID), EDF, voire projets ANR ou européens...
<b>75-(Rennes)</b> <b>Laboratory of Signal and Image Processing: LTSI, IMPACT team,</b> Pr Renaud De Crevoisier <b>UMR INSERM 1099, Rennes University.</b>	<b>1,4</b>	<ul style="list-style-type: none"> <li>• Image processing</li> <li>• Predictive modeling</li> <li>• Adaptative radiotherapy</li> <li>• Functional imaging</li> </ul>	7 FTE senior researchers 10 post-docs and PhD students	<ul style="list-style-type: none"> <li>• <u>National:</u> LaMCoS CNRS UMR 5259 Lyon, CIS-ENSMSE Ecole des Mines Saint Etienne, TIMC-IMAG CNRS UMR 5525 Grenoble, LATIM Inserm U1101 - Institut Telecom Brest, LabTau INSERM U1032, Lyon, UTC</li> </ul>	<u>recurrent resources:</u> INSERM <u>research contract:</u> INCa ANR- Labex CominLabs & CAMI IResP

Campus de Beaulieu, Université de Rennes 1 F-35042 Rennes				CNRS UMR 7338 Compiègne). • <u>International:</u> LIST-CRIBs, SouthEast University, Nanjing, China; CSIRO, Australia; Ryerson University, Toronto, Canada; UNET, Tachira, Venezuela; UNC- Universidad Nacional de Colombia, Bogota	CGO <u>Industrial partners:</u> ANSYS (Lyon), AQUILAB (Lille), EDAP (Vaulx-en- Velin), ELEKTA (Paris), KEOSYS (Nantes), THERENVA (Rennes), PHILIPS (Aachen, Best), SIEMENS (Forchheim, Paris), GE (Horten, Norway).
<b>76-(Strasbourg)</b> <b>Département de</b> <b>Radiobiologie,</b> <b>Hadronthérapie et</b> <b>Imagerie Moléculaire:</b> <b>DRHIM</b> Patrice Laquerière <b>IPHC: Institut</b> <b>Pluridisciplinaire Hubert</b> <b>Curien, CNRS, Univ. de</b> <b>Strasbourg.</b>	2,3	<ul style="list-style-type: none"> <li>• Chimio- radiothérapie,</li> <li>• Fortes doses</li> <li>• Radiobiologie des protons et ions</li> </ul>	<u>5 FTE:</u> 3 senior researchers: (1PUPH-HDR,1MCU- HDR,1CR), 2 Doc; 1 Post-doc. <u>Equipment</u> • Plateforme de radiobiologie expérimentale in vitro et in vivo proton (25 MeV) • Biobeam 8000 ( <sup>137</sup> Cs), • LINAC, • dosimétrie associée.	<ul style="list-style-type: none"> <li>• <u>National :</u> laboratoires CNRS-IN2P3, CRLCC Dijon, CRLCC Nancy, CHU Bordeaux.</li> <li>• <u>International :</u> Equipes radiobiologie Namur et Liège (Be)</li> </ul>	CNRS, INCa, Région grand- Est, Eurométropole Strasbourg, CRLCC Paul Strauss, Ligue régionale contre le cancer, Alsace contre le cancer, Département du Bas-Rhin, EDF.
<b>77-Groupe de</b> <b>radiobiologie, Pr. Georges</b> <b>Noël</b> <b>CRLCC Paul Strauss,</b> <b>Université de Strasbourg</b>	2,3				
<b>78-(Toulouse)</b> <b>Imagerie et balistique en</b> <b>radiothérapie</b> Pr Anne Laprie <b>Part of the DEVIN TEAM</b> (Development and Evaluation of Imaging Biomarkers) <b>Unité INSERM UMR 1214</b> <b>ToNIC (Toulouse Neuro</b> <b>Imaging Center)</b>  Toulouse III University and IUCT-Oncopole	1,4	<ul style="list-style-type: none"> <li>• Pediatric and adult brain tumors</li> <li>• Head and neck tumors</li> <li>• Metabolic and functional imaging, particularly MRI, MRspectroscopy.</li> <li>• Radiomics</li> <li>• Prospective translational clinical trials</li> <li>• In Silico photons and protons dosimetric studies</li> </ul>	3 FTE senior researchers 1 Doc 1 post-doc	<ul style="list-style-type: none"> <li>• <u>Past International collaborations :</u> FP7 Marie Curie SUMMER ( Aquilab, Delft, Roma, Vienna, Friburg)</li> <li>• <u>Running national collaborations :</u> - PAIR pediatric - PEPPI Study -SPECTRO GLIO Trial</li> <li>• <u>Running International collaboration:</u> RETRACE Study (Maastricht, Dresden, Toulouse)</li> </ul>	Ligue contre le Cancer SFCE INCa Fondation pour la Recherche Médicale  Industrial contract : Accuray
<b>79-(Toulouse)</b> <b>Team 11 “Glioblastoma</b> <b>radioresistance :from</b> <b>signalling to clinical trial”</b>	1,3	<ul style="list-style-type: none"> <li>• Radioresistance mechanisms deciphering</li> <li>• Glioblastoma stem</li> </ul>	Senior researcher ETP : 4 ETP Tech and engineers : 2.5 ETP	• Coordination of the of the national MOGLIMAGING project (National HTE program)	• Plan cancer/ITMO/ Aviesan (HTE program)

<p>INSERM Team</p> <p>Pr Elizabeth Cohen-Jonathan Moyal</p> <p><b>CRCT, UMR1037</b></p>		<p>cells radioresistance mechanisms, radiation-induced plasticity</p> <ul style="list-style-type: none"> <li>• Invasion and hypoxia pathways</li> <li>• Study of glioblastoma heterogeneity</li> <li>• In vitro and in vivo target validation (orthotopic xenografts)</li> <li>• Study of the radiosensitizing effect of targeted drugs against the previously studied targets and radiotherapy in vitro and in vivo.</li> <li>• Clinical trial design coming from the lab results</li> <li>• Validation of the targets on national data base</li> </ul>	<p>Post-doc : 1.5 ETP PhD students :3</p> <p><u>Specific equipment</u> : Currently Gamacell Nordion that will be replaced in march 2018 by an animal irradiator for precise irradiation as well as in vitro irradiation</p>	<ul style="list-style-type: none"> <li>• Coordination of the clinical trial and biologic project STEMRI (Radiomics and GBM stem cells)</li> <li>• Coordination of the study of the radioresistance signature of the patients included in the national POLA data base</li> <li>• WP radioresistance of the RAD 18 program (national program granted by ARC)</li> <li>• WP1 of the CAPTOR PHUC program (FGFR and radioresistance)</li> <li>• Proteomic study of the clinical trial (coordination E Moyal) associating cilengitide and radiochemotherapy in stage III NSCLC (with Meck KGa)</li> </ul>	<ul style="list-style-type: none"> <li>• INSERM (Gros équipement)</li> <li>• ARC</li> <li>• Ligue contre le Cancer</li> <li>• RITC / Region</li> <li>• PHUC</li> </ul>
<p><b>80-(Toulouse)</b> <b>CRCT UMR 1037 INSERM</b> Université Paul Sabatier Centre de Recherches en Cancérologie de Toulouse <b>Équipe 15</b> <b>Responsable: M. Bardiès</b></p>	<p><b>1,2,3,4</b></p>	<p>Modélisation Monte-Carlo : dosimétrie en radiothérapie interne et externe</p>	<p>Statutaires: 6 (3,2 ETP) Post Docs : 2 (2 ETP) Docs : 4 (4 ETP) ITA : 1 (1 ETP)</p>	<p>OpenGate (Steering Committee) opengatecollaboration.org Geant4-DNA (Core Development) OpenDose (opendose.org) EURADOS <u>Enseignement</u> : EANM (ESMIT WG3) EFOMP (ESMPE Board) SFPM (CE/CA)</p>	<p>EuraMET MEDIRAD CRP IAEA SCK-CEN Keosys</p>
<p><b>Networks</b></p>					
<p><b>Local Networks</b></p>					
<p>Région Normandie <b>ARCHADE : Advanced Resource Centre for HADrontherapy in Europe</b></p>		<ul style="list-style-type: none"> <li>• Hadrontherapy research</li> <li>• Development of hadrontherapy technology</li> <li>• Facility for research</li> </ul>	<p>8 teams mainly included in this table</p>	<p>Federates about 8 teams from Caen University and associated institutions</p>	<p>Teams own funding plus Région Normandie (CPIER)</p>
<p>Research Network : <b>Le GRRAP</b></p> 	<p><b>2,3,4</b></p>	<ul style="list-style-type: none"> <li>• Groupe de Recherche en Radiothérapie de l'Assistance Publique - Hôpitaux de Paris (AP-HP)</li> </ul>	<p><b>Domain of Translational Research:</b> <u>Prediction of efficacy of radiotherapy and combined radiotherapy to new drugs</u> <u>Prediction and prognostic of radiation-induced damage in healthy tissues</u></p>		
<p><b>MED-OSIRIS</b></p> <p><b>Pierre Saintigny, Christophe Ketterlé</b></p>	<p><b>5</b></p>	<p>Oncology</p> <p>Data modeling (Interoperability) of</p>	<p>9 EFT</p>	<p>Inter-SIRIC: AP-HP – HEGP (SIRIC CARPEM); IPC; IGR (SIRIC SOCRATE</p>	<p>INCa</p>

CLB, Institut Curie, Institut Bergonié, CHU de Bordeaux		health data in Oncology		2.0); CHU Nantes – CHU Angers - ICO (SIRIC ILIAD); AP-HP- Sorbonne Université (SIRIC CURAMUS) ; ICM (SIRIC Montpellier). UNITRAD RadioTransNet	
<b>Fédération de Recherche Claude Lalanne FCL</b> <b>Co-heads:</b> Prof. J-M. Hannoun-Levi (PU-PH, Centre Antoine Lacassagne) Franck Mady, Professeur, Université Côte d'Azur, Institut de Physique de Nice, CNRS UMR 7010 <b>Tutelle :</b> Université Côte d'Azur <b>Structure répertoriée au RNSR</b> sous numéro 201822717U	1, 2,4	<b>Recherche pluridisciplinaire sur l'interaction des rayonnements ionisants avec la matière vivante et Inerte. Axes :</b> - Détecteurs et accélérateurs - Imagerie et positionnement - Interaction des rayonnements avec le vivant - Calcul de la dose - Recherche clinique et modélisation - Tests de tenue des composants pour le spatial Voie de faisceau protons R&D pour expériences fondamentales (radiobiologie, dosimétrie, physique...)	<b>Constitution :</b> Structure Fédérative de Recherche organisée autour du plateau médico-technique du Centre Antoine Lacassagne et s'appuyant sur 10 unités de recherche d'université Côte d'Azur en sciences du vivant, physique, chimie, mathématiques et traitement d'images. Pas de personnels en propre, sauf CDD de thèse sur projets.  <b>Équipements :</b> Plateau technique d'irradiation du Centre Antoine Lacassagne dont : - 1 cyclotron : protons jusqu'à 65 MeV avec voie de faisceau clinique et voie de faisceau R&D (de 10 microGy/s à >10 kGy/s) - 1 synchrocyclotron : protons jusqu'à 226 MeV - 1 accélérateur stéréotaxie - 4 accélérateurs IMRT - Curiethérapie - Contacthérapie	<b>Collaborations Nationales :</b> <u>Académiques</u> - Laboratoire Hubert Curien, CNRS UMR 5516, Université Jean Monnet, Saint Etienne - Laboratoire PhLAM, CNRS UMR 8523, Université de Lille - Centre National d'Études Spatiales, Toulouse, - IN2P3, - CEA, - Laboratoire IP2I – Equipe PRISME- UMR CNRS 5822 (Lyon-Sud)  <u>Industrielle :</u> - Société AbysMedical (La Rochelle, France) projet BIGER, - Société iXBlue, division fibres et composants, St Germain en Laye (projet FIDELIO)  <b>Collaborations internationales</b> - Laboratoire « Clinical Radiobiology », GSI, Allemagne - Laboratoire NIRS, Japon - Laboratory of Biomedical Engineering for Cancer, Tohoku University, Japon	<b>Financement récurrent tutelle</b> (Univ. Côte d'Azur), 10 k€/an  <b>Projets financés en cours :</b> - ANR FIDELIO, 604 k€ - Projet BIGER France Relance, 144 k€ - INCa-INSERM, 300 k€ - Fondation ARC, 120 k€ - Ligue Cancer, 250 k€  - Travel Grant AUF-Prisa, 18 k€
<b>National Networks</b>					
<b>RESPLANDIR :</b> Réseau de plateformes de radiothérapie préclinique (GDR-Mi2B) (Mickael Beuve, David Brasse, Céline Mirjolet, Frédéric Pouzoulet, Marc Rousseau)	2,3,4	<ul style="list-style-type: none"> <li>• <u>Translational research</u></li> <li>• <u>Medical Physics</u></li> <li>• <u>Preclinical radiation therapy</u></li> </ul>	<u>Specific equipment (in evolution):</u> - 3 Xrad320 - XRad 225Cx - 4 SARRP - 2 linac - XenX - neutrons generator, 2.5<E<14 MeV	<b>RESPLANDIR</b> is a National Network of -PAVIRMA (Clermont, In2P3, UCA) : G Montarou -Plateforme d'Imagerie et de Radiothérapie préclinique, Unité RT (Dijon, CGFL) : C Mirjolet - RadexP (Curie) : F Pouzoulet	Each team has its own funding to perform their research activity but currently, RESPLANDIR has not specific funding

			<ul style="list-style-type: none"> <li>- neutrons generator, E&lt;2.5 MeV</li> <li>- proton generator, E&lt; 3.5 MeV</li> <li>- alpha generator 17MeV&lt;E&lt;70 MeV</li> <li>- deuteron generator</li> <li>- proton generator E&lt;25 MeV</li> <li>- 12C, Ions lourds, E&lt; 95 MeV/n</li> <li>- 1 CIXD</li> <li>- micro-faisceau alpha/proton E&lt; 3MeV</li> </ul> <p>Access to proton medical beam line</p> <p><u>Constitution</u> : ≈ 36 ETP</p> <ul style="list-style-type: none"> <li>- Radiobiologists</li> <li>- Radio physicists</li> <li>- Technicians</li> <li>- Students</li> </ul>	<ul style="list-style-type: none"> <li>- Lyon University : G Alphonse</li> <li>- IRSN, Paris : M Dos Santos</li> <li>- CEA, Paris : V Ménard</li> <li>- IRBA, Paris : P Martigne</li> <li>- GENESIS (LPSC,Grenoble, IN2P3-Université) : Maud Baylac</li> <li>- AIFIRA (CENBG, Bordeaux, IN2P3-Université) : Philippe Barberet</li> <li>- ARRONAX (GIE ARRONAX, Subatech, IN2P3-Université): Vincent Metivier, Charbel Koumeir</li> <li>- PRECy (IPHC, Strasbourg, IN2P3-Université): Marc Rousseau</li> <li>- IRABAT/IRASME (LARIA, Caen, CEA) : Yannick Saintigny</li> <li>- Biobeam 8000 (Centre Paul Strauss, Strasbourg) : Hélène Burckel</li> <li>- IRCM, Strasbourg, Muriel Brengues</li> </ul>	
<b>Ex-France HADRON</b>		<b>4 WP</b> Hadrontherapy research: <ul style="list-style-type: none"> <li>- Clinical research</li> <li>- Data for dose modelling</li> <li>- Radiobiology</li> <li>- Instrumentation</li> </ul>	26 teams mainly included in this table	Federates 26 teams from all over France International collaborations: ENLIGHT	Teams own funding plus network funding by ANR (2013-2017)
<b>Cancéropôles</b>		<ul style="list-style-type: none"> <li>- reinforce the mobilization of research teams</li> <li>- boost clinical research</li> <li>- enable the emergence of innovative research projects</li> <li>- anchor within the European collaborative dynamic</li> <li>- contribute to position France as an international reference in cancer research</li> </ul>	<b>7 Cancéropôles :</b> <ul style="list-style-type: none"> <li>- Nord Ouest</li> <li>- Ile de France</li> <li>- Grand Ouest</li> <li>- Est : RIBIOTHIM-Onco</li> <li>- Grand Sud Ouest</li> <li>- CLARA</li> <li>- PACA</li> </ul>	Federate research institutions, university hospitals, cancer centers, pharmaceutical and biotech companies and are supported by French Cancer Institute (INCa) and many local governments	INCa Local & regional authorities Foundations & associations, pharmas, ...etc.
<b>UNITRAD (Unicancer radiation oncology group) board:</b> <ul style="list-style-type: none"> <li>• Sofia RIVERA, MD PhD, radiation oncologist (Gustave Roussy - Villejuif)</li> <li>• Catherine DEJEAN, PhD, Medical physicist (CAL – Nice)</li> </ul>	<b>1,2,3,4</b>	<ul style="list-style-type: none"> <li>• Artificial Intelligence (AI) : Radiomic/Imaging</li> <li>• Radiobiology : Immunoradiotherapy /Radiosensitivity/ Radiopotentialisation</li> </ul>	Operational team (R&D Unicancer) : project lead/project managers/CRAs/ clinical trial coordinators/project assistant Steering Committee & General assembly radiation oncologists, physicists, dosimetrists,	<ul style="list-style-type: none"> <li>• <b>Industry collaborations:</b> <ul style="list-style-type: none"> <li>▪ Pharma: Pierre Fabre médicaments/MS D/Institut Roche</li> <li>▪ Start-ups: TheraPanacea, Aquilab, Natara</li> </ul> </li> </ul>	Funding resources : PHRC, Pharma

<ul style="list-style-type: none"> <li>Stéphane SUPIOT, MD PhD, radiation oncologist (ICO – Nantes)</li> <li>A. LAMRANI-GHAOUTI, PhD, Clinical program Lead (Unicancer R&amp;D)</li> </ul>		<ul style="list-style-type: none"> <li>New technologies and physics</li> <li>innovation</li> <li>Radiotherapy Quality Assurance</li> <li>Safety/ Security</li> <li>PROMs/ Real-world data (Data Farming)</li> </ul>	<p>qualiticians radiobiologists and statisticians.</p>	<ul style="list-style-type: none"> <li>Radiotherapy vendors: Elekta</li> <li><b>Academic collaborations</b></li> <li>EORTC/EADO/Sakgen group/Canadian cancer Trials Group/University of Leicester</li> </ul>	
<p><b>SFBR (French Society of Radiation Biology)</b></p> <p>Members from INSERM, CNRS, CEA, IRSN, CLCC, Curie Institute, Universities, Hospitals</p>	1, 2, 3	<p>"From fundamental radiation biology to (pre)clinical transfer": (internal and external radiotherapies (RT); innovative RT; radioprotection; effects on healthy tissues, tumors and tumor microenvironment; Biological prediction of response to RT; treatment of side effects; combinations of RT with other therapies</p>	<p>French learned society of radiobiology: 180 active members distributed throughout the territory. Access to numerous facilities (own material or shared platforms): irradiation, imaging, genomic, proteomic, metabolomic, microscopy, flow cytometry, animal experiments ...</p>	<p>Annual membership contribution to SFBR</p> <p>All the members have their own funding for their research activity.</p>	
<b>Industrials</b>					
<p>(Strasbourg)</p> <p><b>Spin Up</b></p> <p>Thomas Puisseux</p> <p>7 allée de l'Europe, 67960 Strasbourg-Entzheim</p>	1	<ul style="list-style-type: none"> <li>MRI geometric distortions for radiotherapy</li> <li>quality control and phantom conception</li> <li>Numerical simulation (fluid dynamics, electromagnetism, MRI physics)</li> <li>4D flow MRI</li> </ul>	<p><b>Researchers :</b></p> <p>Senior researchers: 4 Doc: 1 Part-time engineer: 1</p> <p><b>Specific equipment :</b></p> <p>geometric distortion quality assurance phantoms, access to MRI facility, pulsatile flow test bench, access to HPC resources</p>	<ul style="list-style-type: none"> <li>I2MC Inserm UMR1048, Toulouse</li> <li>IMAG UMR5149, Montpellier</li> <li>CHU Rangueil, Toulouse</li> <li>Centre Henri Becquerel, Rouen</li> </ul>	<p>ANRT (CIFRE)</p> <p>ALARA group</p> <p>Own resources</p>
<p>(Strasbourg)</p> <p><b>FIBERMETRIX</b></p> <p>Mélodie MUNIER</p> <p>7 allée de l'Europe, 67960 Strasbourg-Entzheim</p>	4	<ul style="list-style-type: none"> <li>Dosimetry</li> <li>Medical Physics</li> <li>Conception of real-time (in-vivo) radiation detectors, development and manufacturing,</li> <li>Connected Devices,</li> <li>Optical fiber technologies</li> <li>IHM and software developments</li> <li>Monte Carlo Simulation,</li> <li>Low doses and doses repetition effect</li> <li>Patient dose estimate</li> </ul>	<p><b>Researchers:</b> 1 (1/2 PhD physics, 1/2 PhD radiobiology)</p> <p>PhD Student: 1 CIFRE contract (medical physicist)</p> <p>Engineers: 3</p> <p><b>Specific equipment:</b></p> <p>Radiation platform X-Rays generator (15-160kV)</p>	<ul style="list-style-type: none"> <li>CHU Rangueil, Toulouse</li> <li>CLB Lyon</li> <li>CHU Saint Quentin</li> <li>INSERM UA8 : Radiation, Défense, Santé et Environnement</li> </ul>	<p>ANRT (CIFRE)</p> <p>ALARA group</p> <p>Own resources</p>
<p>(Strasbourg)</p> <p><b>ALARA Expertise</b></p> <p>Ramiro Moreno</p>	1,4	<ul style="list-style-type: none"> <li>Medical Physics</li> <li>Multimodality Medical Imaging Expertise (CT, Interventional Radiology,</li> </ul>	<p><b>Researchers :</b> 3 Full time seniors (Medical physicists with PhD and one with accreditation to supervise researches)</p> <p>Engineers : 7</p>	<ul style="list-style-type: none"> <li>CHU Rangueil, Toulouse</li> <li>I2MC Inserm UMR1048</li> <li>INSERM UA8 : Radiation, Défense, Santé et Environnement</li> </ul>	<p>ALARA group</p> <p>Own resources</p>

7 allée de l'Europe, 67960 Strasbourg-Entzheim		Conventional Radiology, Nuclear Medicine) - Quality Assurance based on ALARA principle - Occupational Radiation Protection - Patient dose estimate - National Radiation estimate (multi center and multi vendors)	<b>Specific equipment :</b> Detectors and phantoms for medical imaging AQ		
(Strasbourg) <b>NEOLYS DIAGNOSTICS</b> Sandrine Pereira 7 allée de l'Europe, 67960 Strasbourg-Entzheim	<b>2,3</b>	- Radiobiology - RT toxicities prediction assays Expertise in development of personalized solutions to define adapted/personalized therapeutic treatments	<b>Researchers :</b> Full time seniors researchers: 1 Junior researchers: 1 Technicians: 1  <b>Specific equipment :</b> Laboratory Equipments	- Centre Léon Bérard (Lyon) - Inserm UA8 (Lyon) - Centre Eugène marquis, (Rennes) - Instituto del tumori (Milan) - Centre François Baclesse (Caen) - Centre François Baclesse (Luxembourg)	ALARA group Own resources
<b>Pharmimage</b> - <b>Oncodesign (Villebon sur Yvette) Cyril Berthet:</b>  - <b>CGFL (Dijon) Alexandre Cochet: imagerie et radiothérapie préclinique</b>	<b>1,3</b>	modèles précliniques, développement de nouvelles molécules en radiothérapie vectorisée  imagerie et radiothérapie préclinique	- Oncodesign : 4 - CGFL : 6	numerous contract services and collaborative programs (IMakinib, IMAPPI, Biocair)	BPI, ANR, Feder...