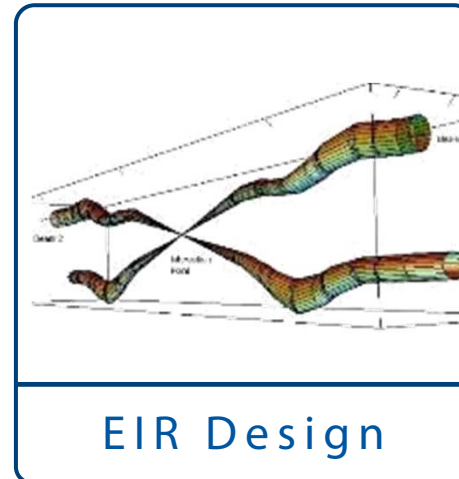


# EC Funded Scope

Lead: **CEA**  
A. Chancé

Co-Lead: CERN  
D. Schulte

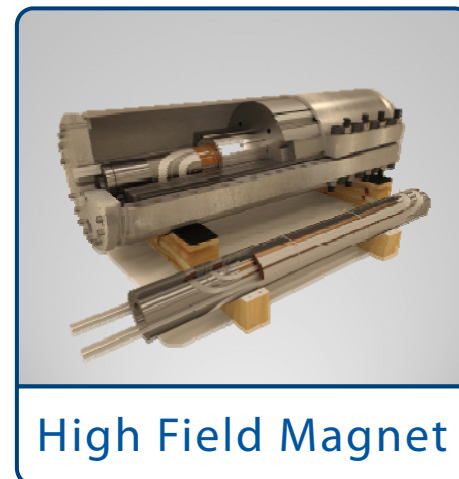


Lead: **JAI**  
A. Seryi

Co-Lead: CERN  
D. Schulte

Lead: **CELLS**  
F. Perez

Co-Lead: CERN  
P. Chiggiato



Lead: **CERN**  
L. Bottura

Co-Lead: **TBA**  
**TBA**

# US Participation

FCC MoU remains to be concluded with DOE for contributions of the following labs to WP5

NHFML FSU	Explore potentials to double $J_c$ of $Nb_3Sn$ at 16 T Propose improvements to strand architectures BSCCO-2212 material research
BNL	Develop coil design concepts (common coils, racetrack) Engineering for US-based 16 T model Study YBCO for HTS inserts
FNAL	Develop coil design concepts (cos-theta, collars) Engineering for US-based 16 T model Study BSCCO-2212 for HTS inserts
LBNL	Develop coil design concepts (blocks, canted-cosine-theta) Engineering for US based 16 T model Study BSCCO-2212 for HTS inserts

# Deliverables & Milestones

- Review and adjust dates
  - Start, durations, due dates
- Identify additional “work chunks” to develop a network work plan (Gantt)
- Adjust for 6 months phase shift
  - between EuroCirCol and FCC project schedule
- Identify WP and FCC dependencies
  - between work chunks for milestones and deliverables

# WP 1 – Management

	Deliverable/Milestone	Start	Duration	Due
D1.1	<b>Preliminary collider baseline parameters</b>	1	3	Sep-15
M1.3	<b>QA, publication and communication plan</b>	1	5	Nov-15
M1.5	<b>Collider baseline parameters</b>	1	11	May-16
D1.2	Communication and outreach strategy	7	6	Jun-16
M1.6	1st Annual EuroCirCol Collaboration Meeting	9	2	Apr-16
D1.4	<b>Collider complex layout and parameters</b>	18	9	Aug-17
M1.8	Outreach package	10	18	Sep-17
M1.9	Implementation and governance model	25	12	Jun-18
D1.6	Plan for use and dissemination of foreground, technical gap analysis	29	12	Oct-18
M1.11	<b>Cost baseline</b>	37	9	Mar-19
D1.7	Preliminary Conceptual Design Report	12	35	Apr-19

# WP 2 – Arc Design

ID	Deliverable or Milestone	Start	Duration	Due
M2.1	WP group established and hiring complete	0	5	Oct-15
M2.2	Preliminary <b>arc optics and lattice files</b>	0	11	Apr-16
D2.1	Overview of <b>arc design options</b>	0	12	May-16
D2.2	Overview of <b>collimation concepts</b>	6	12	Nov-16
D2.3	<b>Requirements and constraints</b> of arc design options <b>on WP3, WP4, WP5</b>	19	8	Aug-17
D2.4	<b>Arc design baseline</b>	26	6	Jan-18
M2.3	Arc <b>component functional design specifications</b> for baseline	29	6	Apr-18
M2.4	Analysis of <b>electron cloud effects and mitigation options</b>	28	12	Sep-18
M2.5	<b>Consolidated arc design</b>	35	6	Oct-18
D2.5	Arc design including <b>optimized and integrated lattice deck</b>	35	9	Jan-19
D2.6	<b>Collimation system design concept and performance estimate</b>	39	6	Feb-19
M2.6	Report on recommended followup R&D	41	6	Apr-19



# WP 3 – EIR Design

ID	Deliverable or Milestone	Start	Duration	Due
M3.1	WP group established and hiring complete	0	5	Oct-15
M3.2	Preliminary <b>EIR optics and lattice files</b>	0	11	Apr-16
D3.1	Overview of <b>EIR design options</b>	3	12	Aug-16
M3.3	<b>Requirements and constraints</b> of EIR design options <b>on WP3, WP4, WP5</b>	16	7	Apr-17
D3.2	<b>EIR design baseline</b>	23	6	Oct-17
M3.4	<b>EIR component functional design specifications</b> for baseline	32	6	Jul-18
M3.5	Report on <b>design option for machine detector interface</b>	22	18	Sep-18
M3.6	<b>Consolidated EIR design</b>	35	6	Oct-18
D3.3	EIR design including <b>optimized lattice deck</b>	35	9	Jan-19
M3.5	Report on recommended followup R&D	41	6	Apr-19

# WP 4 – Cryo Beam Vacuum Sys.

ID	Deliverable or Milestone	Start	Duration	Due
M4.1	WP group established and hiring complete	0	5	Oct-15
M4.2	Beam screen model <b>heat load and photo-electrons density analysis</b>	0	12	May-16
M4.3	Measurement <b>setup at light source</b> operational	6	9	Aug-16
M4.4	<b>Proposal of coatings</b> to mitigate electron-cloud effects	12	6	Nov-16
D4.1	<b>Analysis of vacuum stability</b> at cryogenic temperature	13	9	Mar-17
D4.2	<b>Measurements</b> of vacuum chamber <b>at light source complete</b>	16	12	Sep-17
D4.3	Beam screen and beam pipe <b>engineering design</b>	17	12	Oct-17
D4.4	<b>Analysis of</b> beam-induced <b>vacuum effects</b>	30	6	May-18
M4.5	Cryogenic-beam-vacuum <b>system design</b>	33	12	Feb-19
M4.6	Report on recommended followup R&D	41	6	Apr-19

# WP 5 – 16 Tesla Magnet Design

ID	Deliverable or Milestone	Start	Duration	Due
M5.1	WP group established and hiring complete	0	5	Oct-15
M5.2	Baseline specifications and assumptions for accelerator magnet	0	10	Mar-16
D5.1	Overview of magnet design options	2	15	Oct-16
D5.2	Identification of preferred dipole design options and cost estimates	20	6	Jul-17
M5.3	Specifications for conductors and proposed conductor configurations	28	6	Mar-18
D5.3	Cost model for dipole magnet	21	18	Aug-18
D5.4	Manufacturing folder for reference design dipole short model	22	24	Mar-19
M5.4	High-field accelerator dipole conceptual design report	34	12	Mar-19
M5.5	Report on recommended followup R&D	41	6	Apr-19