

WBS ID	Name
1	Laser driven proton and ion source
1.1	laser
1.2	Target and vessel
1.3	Simulation
2	Proton and ion capture
2.1	Gabor lens
2.2	Simulation
2.3	Alternative technologies for risk mitigation
3	Stage 1 beam transport: Beam transport and delivery to the in vitro end station
3.1	Optics design
3.2	Tracking simulations
3.3	Magnet technology
3.4	Abort line
4	Stage 2 beam transport: Post-acceleration and beam delivery to the in vivo end station
4.1	Optics design
4.2	Tracking simulations
4.3	Ion transfer line to second in vitro end station
4.4	FFA and transfer line technology
4.5	Abort line
5	Biological end stations
5.1	In vitro end station
5.2	In vivo end station
6	Infrastructure and Integration
6.1	Civil and services
6.2	Installation
6.3	Controls and monitoring
7	Project plan for the delivery of LhARA
7.1	Costing
7.1.1	Laser
7.1.2	Capture
7.1.3	Stage 1
7.1.4	Stage 2
7.1.5	End Stations
7.1.6	Integration
7.1.7	R&D and TDR
7.1.8	Safety
7.1.9	Cost of risk mitigation
7.2	Project plan: R&D and TDR
7.3	Risk register and mitigation
8	Safety
8.1	Radiation
8.2	End stations
8.3	Global controls and interlocks
8.4	Construction
9	End-to-end simulation
9.1	Coordination of input from other work packages
9.2	Running end-to-end simulation
10	Instrumentation
10.1	Beam diagnostics
10.2	Dosimetry
10.3	Laser diagnostics
10.4	Gabor lens diagnostics
10.5	End station diagnostics