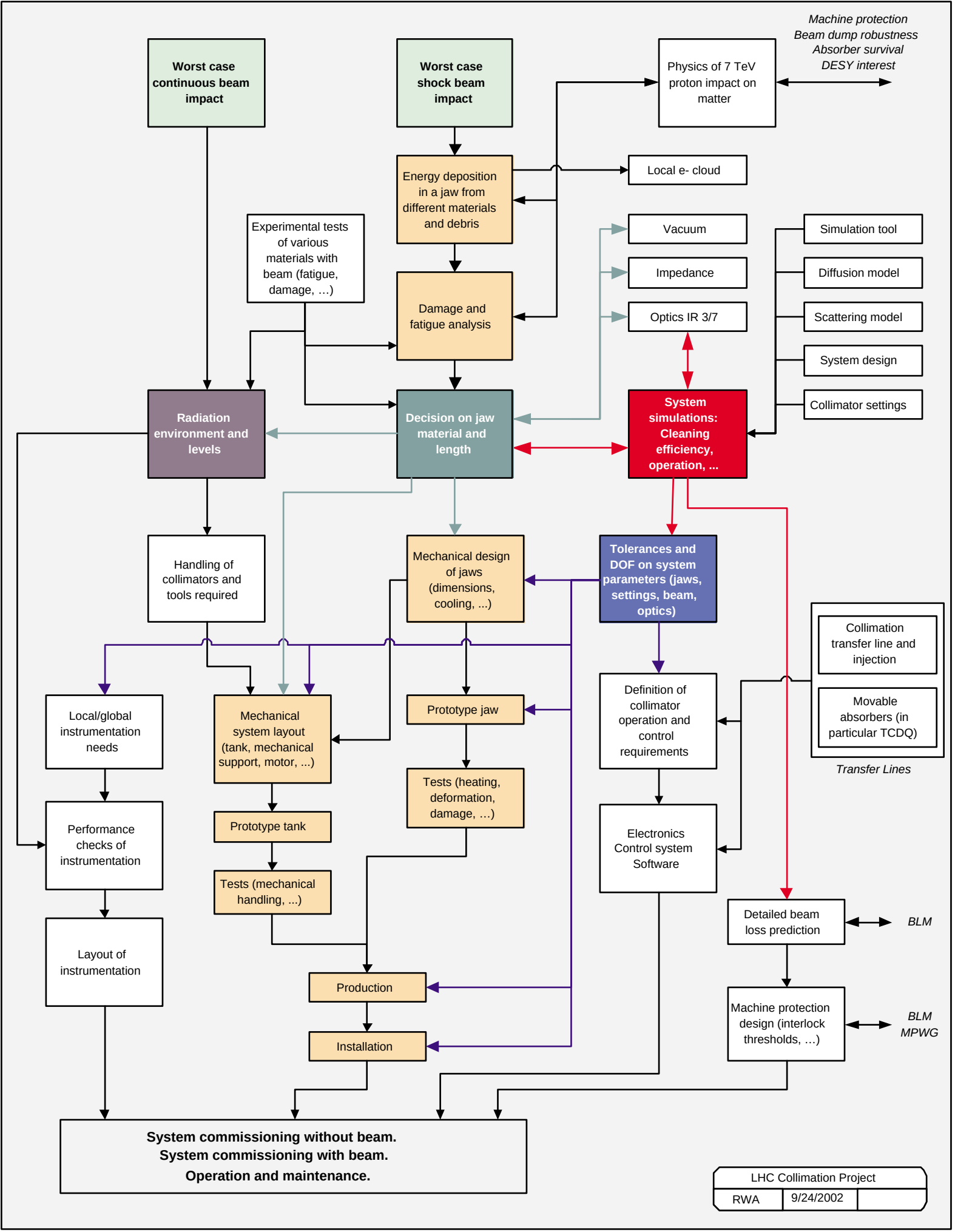
Machine protection
Beam dump robustness
Absorber survival
DESY interest
Worst case continuous beam impact
Worst case shock beam impact
Physics of 7 TeV proton impact on matter
Energy deposition in a jaw from different materials and debris
Local e- cloud
Experimental tests of various materials with beam (fatigue, damage, …)
Damage and fatigue analysis
Vacuum
Impedance
Optics IR 3/7
Simulation tool
Diffusion model
Scattering model
System design
Collimator settings
Radiation environment and levels
Decision on jaw material and length
System simulations: Cleaning efficiency, operation, ...
Handling of collimators and tools required
Mechanical design of jaws (dimensions, cooling, ...)
Tolerances and DOF on system parameters (jaws, settings, beam, optics)
Collimation transfer line and injection
Movable absorbers (in particular TCDQ)
Transfer Lines
Local/global instrumentation needs
Mechanical system layout (tank, mechanical support, motor, ...)
Prototype jaw
Definition of collimator operation and control requirements
Performance checks of instrumentation
Prototype tank
Tests (heating, deformation, damage, …)
Electronics Control system Software
Layout of instrumentation
Tests (mechanical handling, ...)
Detailed beam loss prediction
BLM
Production
Machine protection design (interlock thresholds, …)
BLM
MPWG
Installation
System commissioning without beam.
System commissioning with beam.
Operation and maintenance.
LHC Collimation Project
RWA
9/24/2002