

# **Acronyms**

**B. HL-LHC acronyms**

<b>Acronym</b>	<b>Term</b>
a-C	Amorphous carbon
ADC	Analogue to digital converter
ADT	Transverse damper
AFD	Automatic Fire Detection
ALARA	As low as reasonable achievable
ASIC	Application specific integrated circuit
ATS	Achromatic telescopic squeezing
AUG	Emergency stop buttons
BBLR	Beam-Beam Long Range
BCAM	Brandeis CCD Angle Monitor
BCMS	Bach compression and beam merging scheme
BCS	Bardeen-Cooper-Schrieffer
BCT	Bidirectional Controlled Thyristor
BDS	Beam Dump System
BETS	Beam energy tracking system
BFPP	Bound-free pair production
BGC	Beam Gas Curtain
BGV	Beam gas vertex profile monitor
BIS	Beam interlock system
BLM	LHC beam loss monitoring system
BPM	Beam position monitor
BRAN	TAN luminosity monitor
BS	Beam screen
BSRT	Synchrotron radiation telescope monitor
CALS	CERN accelerator logging system
CARE	Coordinated Accelerator Research in Europe
CC	Crab cavities
CCC	Connection cryostats
CCT	Costheta design
CCB	Cold compressor box
CDB	Circuit Disconnecter Boxes
CDD	CERN design directory
CDP	Conductor development programme
CFC	Carbon fibre carbon composites
CLIQ	Coupling loss induced quench
CMM	Coordinate Measurement Machines
CMOS	Complementary metal-oxide-semiconductor
C.O.M.	Centre-of-mass

## Acronyms

COTS	Commercial-off-the-shelf
CSAM	CERN Safety Alarm Monitoring system
CtC	Cost to completion
CW	Continuous wave
CVD	Chemical vapour deposition
DA	Dynamic Aperture
DAC	Digital-to-analog converter
DAQ	Data acquisition
DCCT	DC Current Transformer
DF	Distribution feedbox
DFBAM	Distribution feedbox for arc – IR 7/L
DFBAN	Distribution feedbox for arc – IR 7/R
DIOT	Distributed I/O Tier
DOE	Department of Energy
DPA	Displacements-per-atom
DQW	Double quarter wave cavity
DSs	Dispersion suppressors
DVB	Cryogenic distribution valve box
DWR	Extraction resistors
EC	Electron cloud
ECT	Endcap Toroid
EE	Energy extraction systems
EIQA	High voltage qualification
EMD	Electromagnetic dissociation
EN	European Norm
EOT	Electric overhead travelling crane
ERA	European Research Area
ESR	Essential Safety Requirements
ESFRI	European Strategy Forum on Research Infrastructure
EUCARD	Enhanced European Coordination for Accelerator Research and Development
EYETS	Extended yearly technical stop
FGC	Function Generator/Controller
FMCM	Fast magnet current change monitors
FNAL	Fermi National Accelerator Laboratory
FPC	Fundamental power coupler
FPGA	Field programmable gate array
FRAS	Full remote alignment system
FSI	Frequency Scanning Interferometry
FT	Focusing triplet
FWDs	Free-wheeling diodes
FWTs	Free-wheeling thyristors
GPN	General Purpose Network
GSI	General Safety Instruction

HDR	High dynamic range
HEB	Hollow electron beam
HEH	High Energy Hadron
HEL	Hollow Electron Lenses
HEP	High Energy Physics
HFM	High-field magnet
HIF	Hazard Identification Form
HL-LHC	High Luminosity Large Hadron Collider
HOM	High-order modes
HTS	High temperature superconductor
HLS	Hydrostatic Levelling Sensor
IBL	Inner pixel detector layer
IBS	Intra-beam scattering
ID	Inner diameter
IES	Important safety element
IFS	Instrumentation feed-through system
IOT	Inductive Output Tubes
IP	Interaction point
IR	Insertion Region / Interaction Region
IT	Inner triplet
ITF	Integrated Transfer Function
LACS	LHC Access Control System
LARP	US LHC Accelerator Research & Development Program
LASS	LHC Access Safety System
LBDS	LHC beam dumping system
LBS	LHC background study working group
LCB	Lower cold box
LIU	LHC Injector complex Upgrade
LLRF	Low level RF
LMBHA/B	Cold mass 11 T
LRBB	Long-range beam-beam
LS[X]	Long technical Shutdown [Id Number]
LSA	Launch Safety Agreement
LSB	Least Significant Bit
LSS	Long Straight Section
LVDT	Linear variable differential transformer
MB	Main LHC dipoles
MBH	11 T dipole
MBU	Multiple bit upsets
MCDO	Magnet corrector decapole/octupole
MCS	Magnet corrector sextupole
MD	Machine development
MFB	Multi-cavity feedback

## Acronyms

MIM	Multi-band instability monitor
MIMO	Multiple Input Multiple Output
MKB	Diluter dump kicker
MKD	Beam dump kicker
MLI	Multi-Layer Insulation
MKI	Magnet injection kicker
MMD	Multi-purpose Monitoring Device
MP3	Magnet circuits, powering and performance panel
MP	Machine Protection
MPP	Machine protection panel
MPS	Machine protection system
MQY	Insertion region wide aperture quadrupole
MS	Matching section or Member States
NEG	Non-evaporable getter
NIEL	Non-ionizing energy losses
NIMS	National Institute of Materials Science
NMS	Non-Member States
NXCALS	Next generation Accelerator Logging Systems
P[#]	LHC Point [Number of the Point]
P5	Particle Physics Project Prioritization Panel
PIC	Powering interlock system
PIT	Powder-in-tube process
PLC	Programmable logic controller
PSM	Project Steering Committee
PSO	Project Safety Officer
PU	Pile-up
QEN	Bypass cryostat
QDS	Quench detection system
QPS	Quench protection system
QRL	LHC cryogenic distribution line
QV	Quench buffer
QXL	HL-LHC cryogenic distribution line
r.m.s.	Root mean square
R2E	Radiation To Electronics
RAMSES	Radiation Monitoring System
RF	Radio frequency
RFD	RF dipole cavity
RHQT	Rapid-heating, quenching transformation
RRP	Restacked rod process
RRR	Residual resistivity ratio
SC	Superconductor
SCL	Superconducting link
SCRF	Superconducting radio frequency

SEE	Single event effects
SET	Single event transients
SEU	Single bit upsets
SEY	Secondary electron yield
SFP	Small Form-factor Pluggable
SIL	Safety integrity level
SISO	Single Input Single Output
SM	Service module
SPS	Super Proton Synchrotron
SPT	Scheduled proton physics time
SR	Synchrotron radiation
SRF	Superconducting radio frequency
SSAP	Solid State Power Amplifiers
TANB	Target Neutral Absorber P8
TAXN	Target absorber for insertion region neutrals
TAXS	Target absorber for insertion region secondary
TCAP	Target collimator absorber passive
TCC	Technical Coordination Committee
TCDQ	Collimator for Q4 protection
TCL	Long collimator
TCLA	Target collimator long absorber
TCLD	Auxiliary collimators in DS area
TCPP	Primary collimator with BPM
TCSG	Target collimator secondary graphite
TCSMP	Secondary collimator metallic prototype
TCSP	Secondary collimator with pick-up
TCSPM	Secondary collimator with pick-up metallic
TCT	Target collimators tertiary
TCTP	Target collimator tertiary with pick-up
TCTPM	Target collimator tertiary with pick-up metallic
TDE	Target dump for ejected beam
TDI	Beam absorber for injection
TID	Total ionizing dose
TIM	Technical Infrastructure Monitoring system
TMCI	Transverse mode coupling instability
TN	Technical Network
TS[X]	Technical stop [Id number]
TSU	Trigger Synchronisation Unit
UA[X]	Service and access tunnel [point number]
UCB	Upper cold box
UFO	Falling particles
UJ[X]	Service cavern [point number]
UPS	Uninterruptable power supplies

## Acronyms

UQDS	Universal Quench Detection System
US AUP	US HL-LHC Accelerator Upgrade Project
VCT	Vacuum chamber transition
VDWB	Vacuum – dump lines – window
VELO	Vertex locator
WBTN	Wide band time normalizer
WCC	Water Cooled cables
WCS	Warm compressor station
WIC	Warm magnet interlock system
WPS	Wire Positioning Sensors
YETS	Year-end technical stop