LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
- LIGO -
CALIFORNIA INSTITUTE OF TECHNOLOGY
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Channel Naming Convention

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Distribution of this draft:

all

This is an internal working note
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1 INTRODUCTION

This is a guideline to name channels which are recorded by the DAQ system at the LIGO Hanford and the LIGO Livingston Observatories.

2 CHANNEL FORMAT

The channel name consists of:

site system : subsystem – location/mirror _ signal subsignal

For example: H1:LSC–AS1_DC for the channel which samples the dc signal of the first LSC photodiode at the antisymmetric port of the Hanford 4km interferometer.

The following rules apply:

- ➢ Any channel name which can be written to a frame file MUST follow the above format. In particular, it can only use the delimiters ':' (colon), '-' (hyphen) and '_' (underscore) as indicated above. All other characters MUST be letters or numbers.
- ➢ Site, system and subsystem identifiers MUST follow the convention outlined in Section 3 strictly.
- ➢ Location/mirror, signal and subsignal identifiers SHOULD follow (when applicable) the guidelines outlined in Section 4.

3 SITE AND SYSTEM IDENTIFIERS

3.1 SITE

Exactly one letter:

- ➢ H – Hanford
- ➢ L – Livingston

3.2 SYSTEM

Exactly one digit:

- ➢ 0 – site-wide
- ➢ 1 – 4K ifo
- ➢ 2 – 2K ifo

3.3 SUBSYSTEM

Exactly three letters:

- ASC – alignment sensing and control
- CDS – top level control and data acquisition system
- GDS – global diagnostics system
- IOO – Input optics
- LSC – length sensing and control
- PEM – physical environment monitor
- PSL – prestabilized laser
- SEI – seismic isolation
- SUS – suspension
- VAC – vacuum system

4 CHANNEL NAME

The channel name is free format and can contain up to 24 letters.

4.1 LOCATION IDENTIFIERS

- AOM – acousto-optic modulator
- AS – antisymmetric port
- AS1 – antisymmetric port, PD 1
- AS2 – antisymmetric port, PD 2
- AS3 – antisymmetric port, PD 3
- AS4 – antisymmetric port, PD 4
- BSC# – the big ones, numbers from 1 to 10
- BT – beam tube
- BT1 – beam tube, y arm, ~30m
- BT2 – beam tube, y arm, 500m
- BT3 – beam tube, y arm, 1000m
- BT4 – beam tube, y arm, 1500m
- BT5 – beam tube, y arm, ~1990m
- CARM – common arm
- CTM – common test mass
- DARM – differential arm
- DTM – differential test mass
- EOM – electro-optic modulator
- EX – end station, x arm
- EY – end station, y arm
- GW – gravitational wave signal port

- HAM# – the small ones, numbers from 1 to 12
- IB – input beam
- IB1 – input beam PZT 1
- IB2 – input beam PZT 2
- LVEA – corner station
- LVEA1 – corner station, 4K interferometer
- LVEA2 – corner station, 2K interferometer
- MC – mode cleaner
- MICH – Michelson
- MOD – rf modulation signal generators
- MX – mid station, x arm
- MY – mid station, y arm
- NPRO – non-planar ring oscillator
- PC – Pockels cell
- PCART – PEM cart
- PMC – pre-mode cleaner
- POBS – pick-off, ghost beam of beamsplitter
- POUT – PEM outside area
- POX – pick-off, ghost beam of ITMX
- POY – pick-off, ghost beam of ITMY
- PSL1 – prestabilized laser enclosure, 4K
- PSL2 – prestabilized laser enclosure, 2K
- PWR – power stabilization
- QPDX – quadrant monitor photodiode, x arm
- RC – recycling cavity
- REF – reflection port
- REFCAV – reference cavity
- WFS# – wavefront sensor, numbers 1 to 5 and 2A, 2B

4.2 Mirror Identifiers

- BS – beam splitter
- ETMX – end test mass, x arm
- ETMY – end test mass, y arm
- FMX – folding mirror, x arm
- FMY – folding mirror, y arm
- ITMX – input test mass, x arm
- ITMY – input test mass, y arm
- MC1 – mode cleaner input mirror
- MC2 – mode cleaner output mirror
- MC3 – mode cleaner third mirror

- MMT1 – mode matching telescope mirror 1
- MMT2 – mode matching telescope mirror 2
- MMT3 – mode matching telescope mirror 3
- RM – recycling mirror
- SM1 – steering mirror 1
- SM2 – steering mirror 2
- SM3 – steering mirror 3

4.3 Signal Identifiers

- ACC – Accelerometers
- BP – barometric pressure
- BPO – barometric pressure outside
- CAL – calibration
- COAR – coarse actuator
- COIL – coil current
- DC – dc signal
- DST – Dust monitors
- DSG – digital signal generator
- F – frequency
- FINE – fine actuator
- GAIN – gain
- I – intensity, or in-phase signal
- IN– input
- L – length
- LO – local oscillator
- MAG – Magnetometers
- OFS – offset
- OPTL – optical lever
- OUT – output
- P – pitch, pressure
- PHASE – phase
- Q – quad-phase signal
- RAIN – rain
- RF – rf signal
- RGA – Residual Gas analyzer
- RH – relative humidity
- SEIS – Seismometer
- SENS – sensor
- SUM – sum
- TEMP – temperature

- TEMPO – outdoor temperature outside
- THST – Thunderstorm Monitor
- TILT – Tiltmeter
- TI – test input
- TIP – test input pitch
- TIY – test input yaw
- TO – test output
- TOP – test input pitch
- TOY – test output yaw
- WIND – wind speed
- WDIR – wind direction
- WBRF – Wide Band RF receiver
- Y – yaw

4.4 Signal Subidentifiers

1 – one	top	north	upper–left	ux	slow	error signal	resonant sidebands
2 – two	right	east	upper-right	uy	fast	control signal	non-res. sidebands
3 – three	bottom	south	lower-left	uz			MC sidebands
4 – four	left	west	lower-right	rz			PMC sidebands
5 – five	side						
6 – six	sum		sum				

- X – direction of X arm
- Y – direction of Y arm
- Z – upwards