User, Data and Computing Environment					
	CFEL@LCLS	EMBL	GKSS	XFEL	HASYLAB
Beamtime User Management					
System	URAWI	SMIS	DOOR		DOOR
accounts		1/user	1/user	1/user	1/user
created by			user		user
lifetime			∞		∞
credentials			cookie		cookie
Disable accounts?			no		no
Delete accounts?			no		no
Shibboleth useful?					
Certificates useful?					
Other Id's?					
Beamtime					
accounts		1/group	1/beamtime	1/user	1/beamtime
created by			DOOR/Registry		DOOR/Registry
lifetime			6 month		6 month
credentials			local /krb		local/krb
Account used			Beamline account		Beamline||Beamtime
Disable accounts?			yes		yes
Delete accounts?			yes		yes
Recycle accounts?			no		no
Data					
policy	yes[1]	no	no	no	no
ownership	Government		PI		PI
access accounts			Beamline account		Beamline||Beamtime
access credentials			kerberos/afs		kerberos/afs
Storage retention	1yr				
who pays?	Government				
ACLs	POSIX				
ACLs adjustable	yes, user				
Adjst. Frequency					
Archive retention	∞				
% to archive	100				
who pays?	Government				
open access	yes(?)				
embargo period					
ACLs					
ACLs adjustable	yes, user				
Adjst. Frequency					
File standard format	HDF5				none
container file size	100MB-xGB				
# of containers / yr					
Analysis					
on site	yes				
duration	∞				
cpu requirements					
ram requirements					
who pays?	Government				
Other Services					
DFN-RA?					
VOMS?					
IdP's?					
Metadata-DB?					
Electronic Log?					
Batch Computing?					
USB export service?					
who pays?					

1. http://www.bnl.gov/nsls2/workshops/docs/ScientificComputing/08_PerazzoAmedeo_ControlsandDataSystemsforLCLS.pdf

(Meta-) Data Rates, Volumes & Transfer														
	CFEL	EMBL		GKSS	XFEL				HASYLAB					All
	LCLS	MX[3]	SAXS[3]	P05	FDE[3]	MID	SPB[3]	HED	P03	P06	P09	P10	P11	
Data Rates & Volumes[1]														
Peak GB/h	-	500*2	14400	800	7200	7200	36000	7	14k	600	18k	4k	500	-
Avg. GB/h	-	200*2	4200	200	-	-	-	-	4k	100	1,8k	400	100	-
PB/yr[6]	0,5	1,9	20,2	1,0	3,4	2,6	14,2	0,4	20,0	0,5	7,0	2,0	0,5	75
realistically (?)	0,5	1,0	2,0	1,0	3,0	2,0	5,0	0,1	2,0	0,2	0,7	0,5	0,1	18
Data Transfer (import/export)[2]														
Transfer 1Gb/s	46d 46d	176d 90d	5yr 180d	90d 90d	315d 270d	240d 180d	4yr 1,2yr	37d 9d	5yr 0.5y	46d 18d	1,5y 55d	0,5y 46d	46d 9d	20yr 5yr
Transfer 10Gb	5d 5d	18d 10d	187d 20d	10d 10d	31d 30d	24d 20d	131d 50d	4d 1d	0,5y 20d	5d 2d	50d 5d	18d 5d	5d 1d	2yr 0,5y
USB 2.0[4]	92d 92d	360d 180d	10yr 1yr	180d 180d	2yr 1yr	480d 1yr	8yr 2,5yr	75d 18d	10yr 1yr	92d 36d	3yr 0.3y	1yr 92d	92d 18d	40yr 10yr
USB 3.0[4]	10d 10d	40d 21d	1yr 35d	20d 20d	78d 60d	52d 40d	300d 100d	8d 2d	1yr 35d	10d 4d	0,6y 27d	40d 10d	10d 2d	4yr 1yr
2PB Lustre[5]	1d 1d	4d 2d	40d 4d	2d 2d	6d 5d	5d 4d	23d 10d	20h 5h	40d 4d	1d 12h	14d 30h	4d 1d	1d 5h	0,5y 0,1y
dCache														
# of copies														

1. Wild guess based on XFEL TdR and PNI-HDRI
2. For the *unrealistic/realistic* data volumes
3. FDE: Femtoseconds Diffraction Experiments; HED: investigation of High-Energy Density matter; MID: Materials Imaging and Dynamics; MX: Macromolecular X-ray crystallography; SAXS: Small Angle X-ray Scattering; SPB: imaging of Single Particles, clusters, and Biomolecules
4. USB 2.0: max 0,5Gb/s, USB 3.0: max 5Gb/s
5. assuming 5GB/sec per PB read and write bandwidth, roughly 18000GB/h, see http://www.bnl.gov/nsls2/workshops/docs/ScientificComputing/08_PerazzoAmedeo_ControlsandDataSystemsforLCLS.pdf
6. assuming 200days or 4800h of beamtime, except for CFEL.