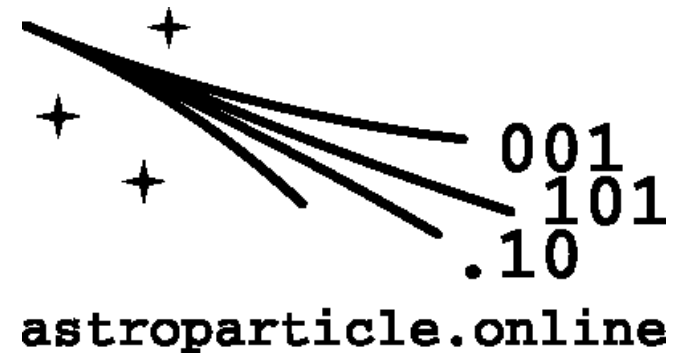


III International Workshop "Data life cycle in physics"



Legal aspects of open data and software in science

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DESY



Motivation



Data is useless without analysis software.

The impact of scientific results strongly depends on the availability of software and its licensing.

We compare experience of astronomical and astroparticle experiments.

The FAIR Data Principles

By adopting all FAIR facets, Data Objects become fully:

- Findable
- Accessible
- Interoperable
- Reusable

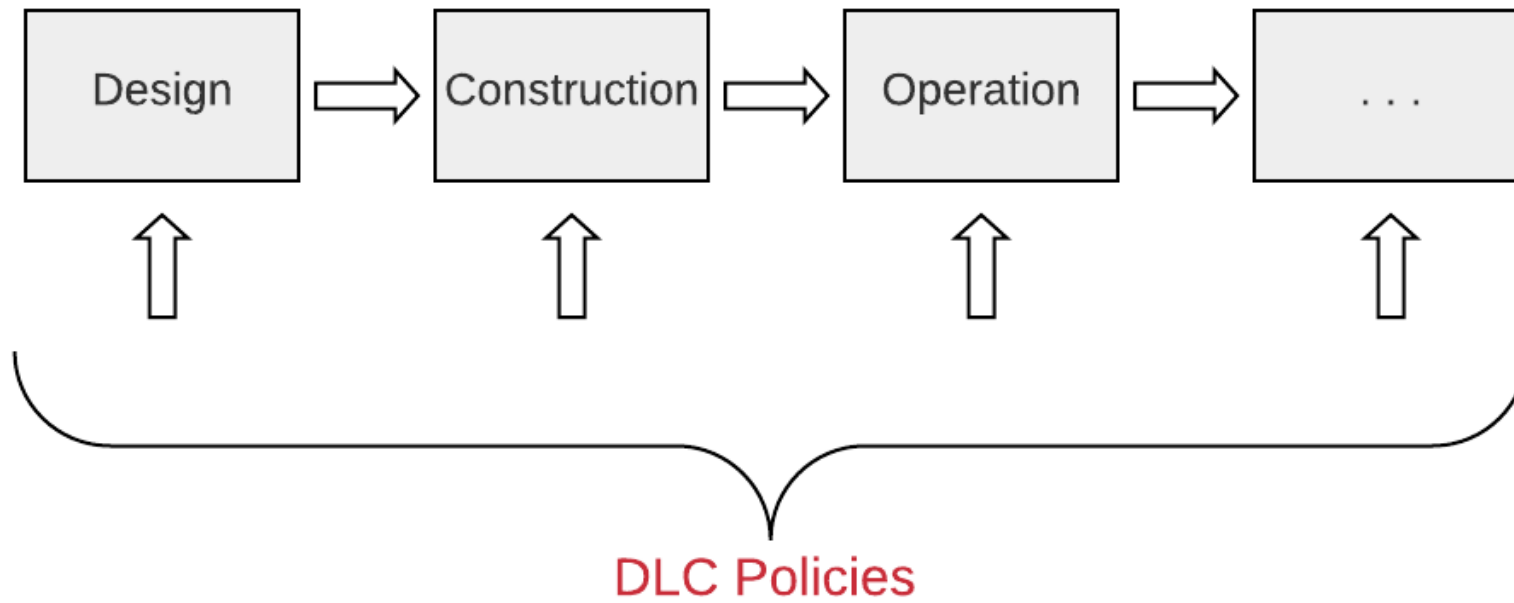


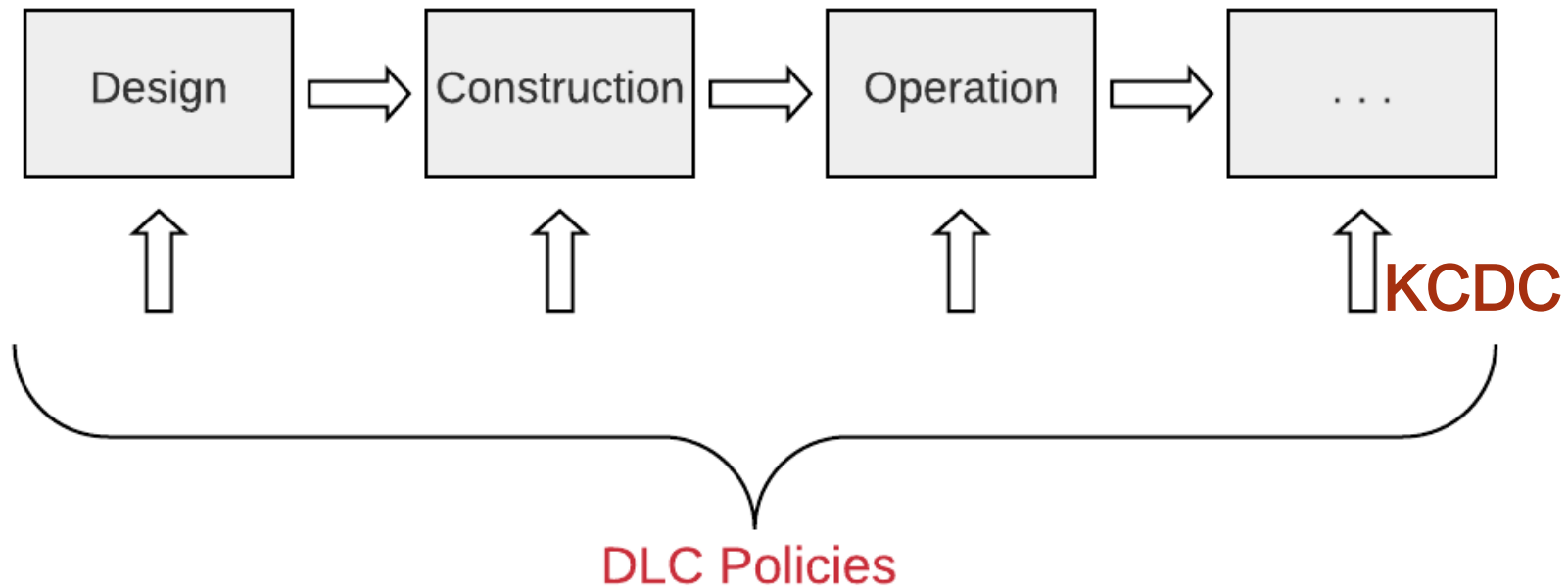


Free software licenses

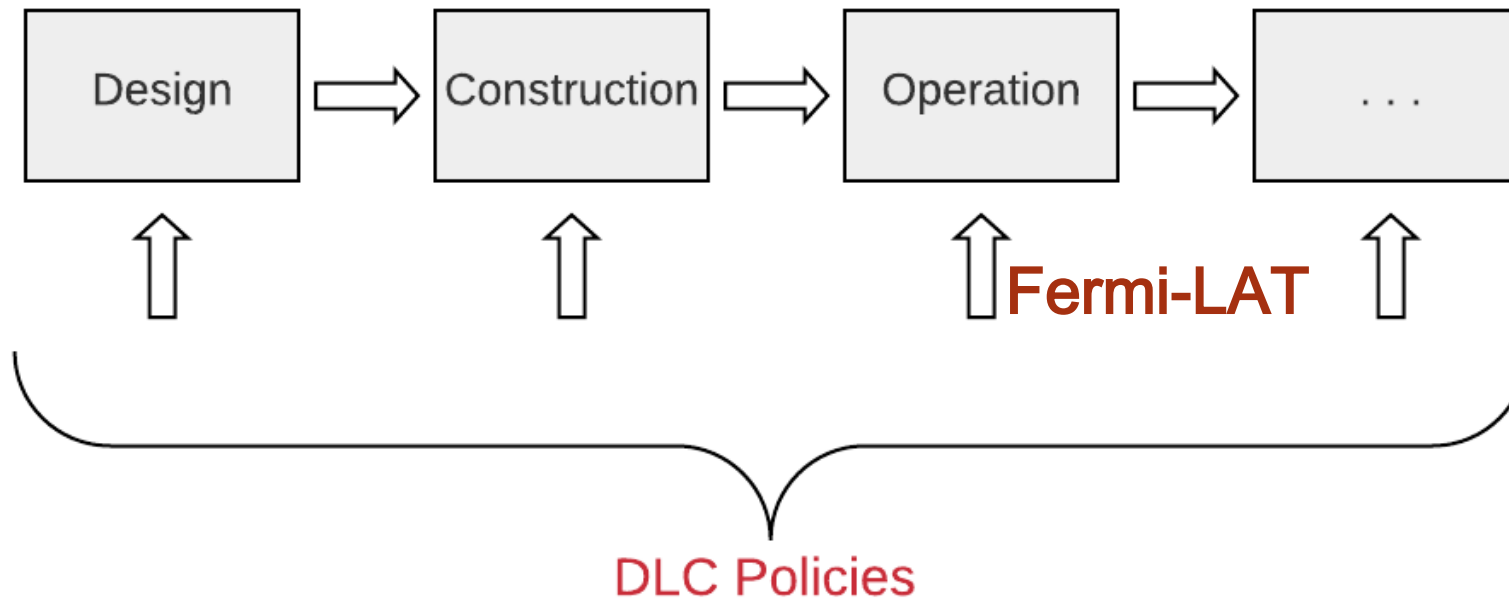
- The **GNU GPL** (GNU General Public License or GPL)
- The **BSD License** (Berkeley Software Distribution License)
- The **MIT License** (Massachusetts Institute of Technology)

Experiment life cycle with DLC

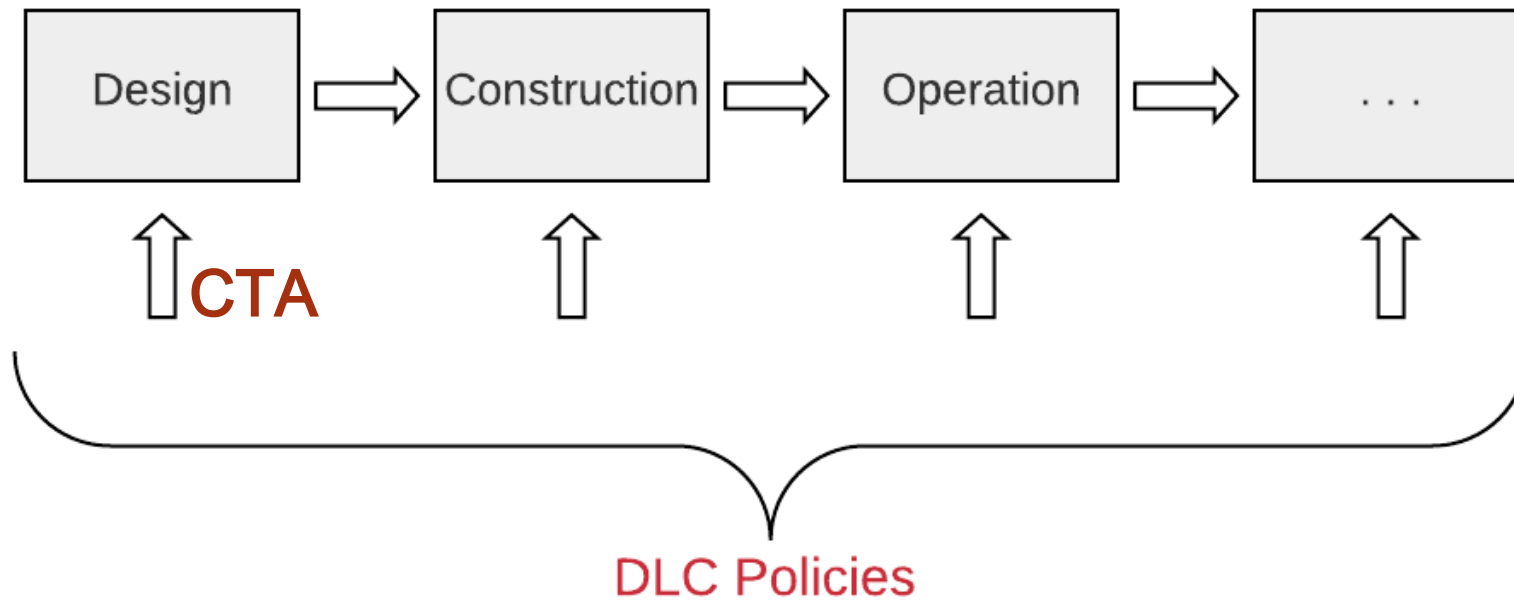




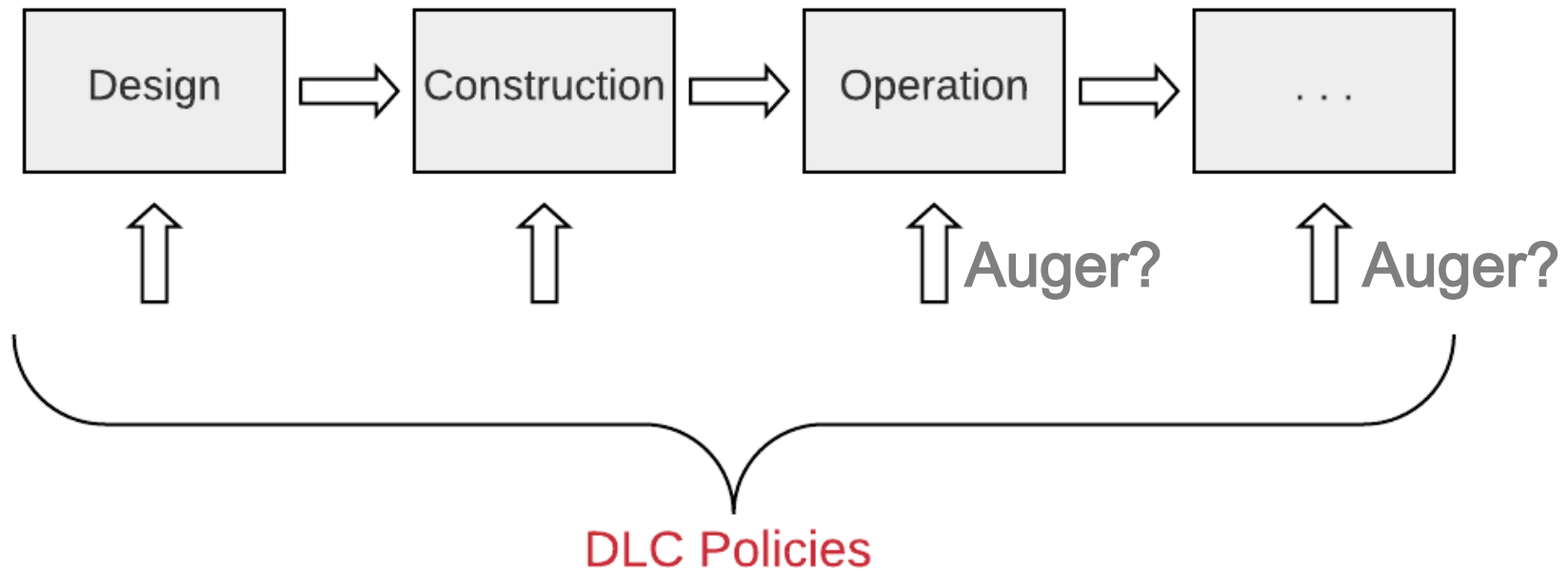
The data is (almost) fully open, however the analysis software is not published in the frame of KCDC.



Data is available in one day after receiving, no proprietary period for data.
Software has BSD-like licenses.

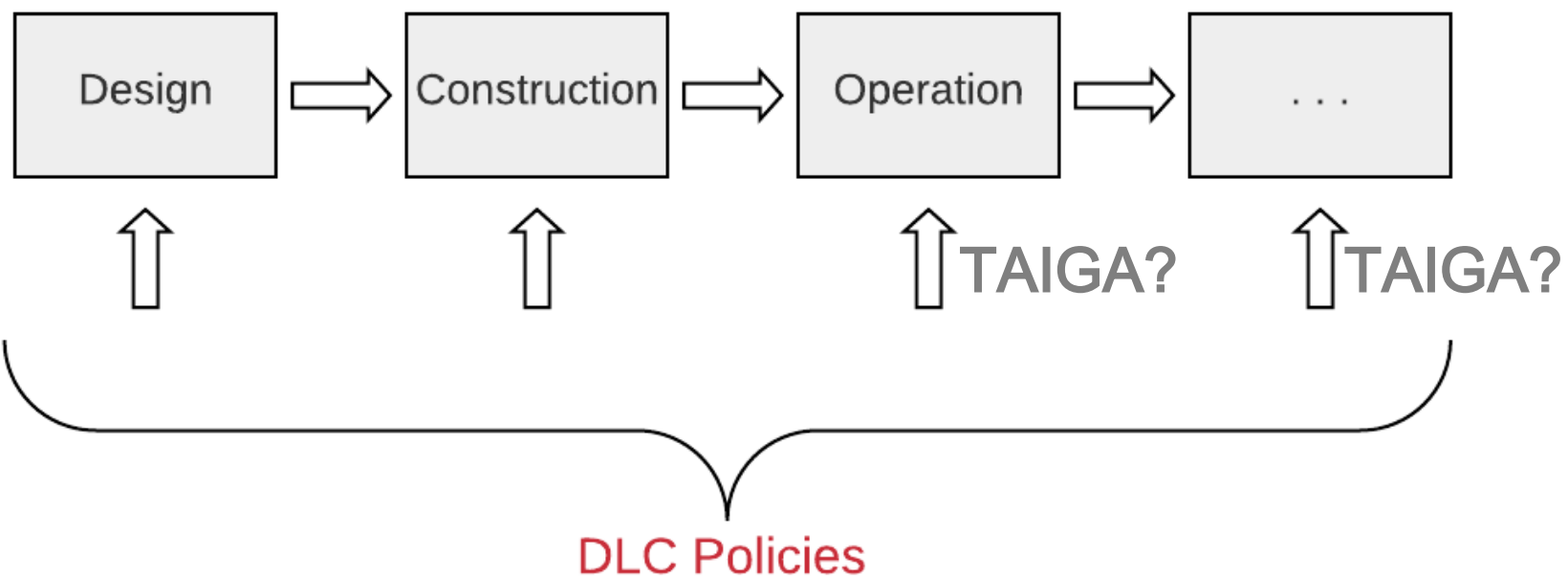


Software are being developed: ctapipe (BSD), astropy (BSD), ctools (GNU GPL)/
The first CTA data challenge is released.



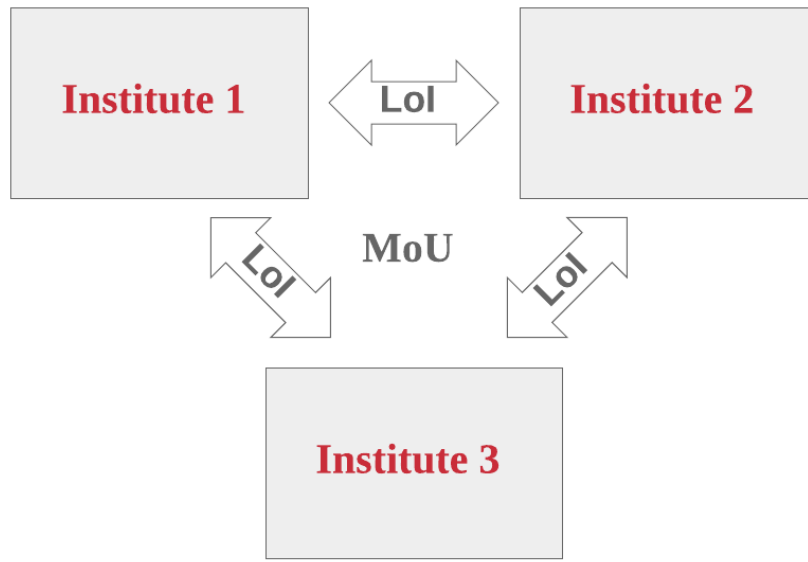
Only 1% of data is published for educational purposes, analysis software are not available.

TAIGA



Tunka-Rex moves towards fully open data and software publishing under GNU GPL.

CTA case



Collaboration

Lol - Letter of Intent

MoU - Memorandum of Understanding



**CTA
(Consortium)**



Summary



- Open licenses for software, data and creative works are standardized and commonly used in industry and by profit/non-profit companies
- The growing complexity of life cycles of experimental setups requires long-term planning of publication policies
- Modern astroparticle experiments have diverse policies of data and software licensing from almost open (e.g. Fermi-LAT) to almost proprietary (e.g. Pierre Auger Observatory)
- Future large-scale experiments like CTA use modern corporation-like organization of work
- More freedom = more impact

Capabilities (Without Application Licensing Restriction)	GPL (Linux)	Dual-GPL (MySQL)	LGPL/MPL (OpenOffice, Firefox)	Apache/BSD (Apache, FreeBST)
1) Download	✓	✓	✓	✓
2) Evaluate	✓	✓	✓	✓
3) Deploy	✓	✓	✓	✓
4) Redistribute	⊘ ¹	✓ ³	✓	✓
5) Modify	⊘ ²	⊘ ²	⊘ ²	✓ ⁴

1) Application needs to be licensed under GPL if redistributed with the GPL asset.

2) Library code modifications need to be licensed under the same license as the originating asset.

3) Usually requires a commercial license from the copyright holder.

4) Although much more permissive than an OSI license, some BSD based licenses, such as Apache V2, still have some copyleft materials.