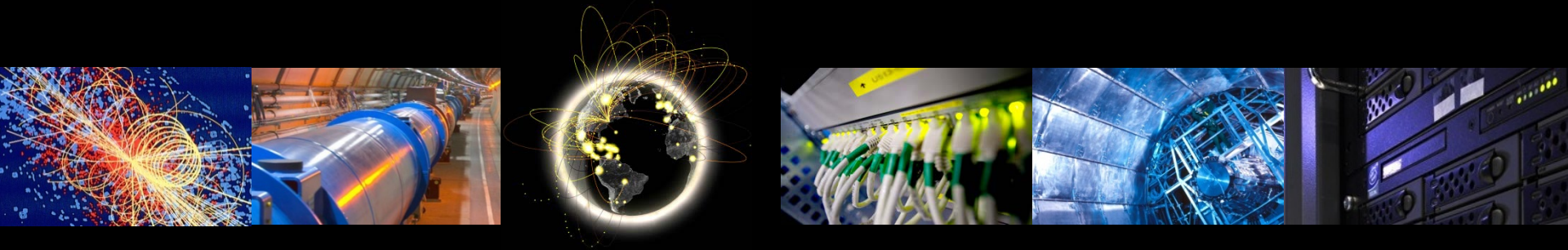


# Traceability Model & Pilot workflow

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# Site resources with ACLs

- Compute (WN/VMs):
  - Authentication using VO/pilot credential
  - Logging: Which VO/pilot, when, where, from where
    - End user authenticated by the VO itself
    - User suspension by VO itself, pilot can get suspended if critical delays
  - No persistency after job run/VM deleted
- Storage:
  - Authentication using ?
  - Persistency: need to know who owns it
  - Logging: ?

# Basic pilot/singularity workflow

- Worker node receive VO pilot (logged by site)
- Worker node isolate pilot job
  - Pilot receive user job (logged by VO)
  - Pilot create user environment (work/scratch)
  - Pilot isolate user using Singularity
  - **User job contained in its environment**
    - Can't touch pilot files/processes/open file descriptors/...
  - Pilot clean up user environment (logged by VO):
    - No stale file without ownership between jobs
    - Be careful of logical links out the chroot
- Worker node cleans pilot environment

# Storage-1: Push user creds.

- Model 1: User credentials pushed to jobs:
  - Site has full control of ACLs & ownership
  - Pilot push user credential in container env.
  - Job can read/write with its own credentials
- Advantages:
  - Full traceability & ownership
  - Files can be read/written at any time
- Cost/complications:
  - User credentials still have to be pushed
  - Complex ACLs ?

# Storage-2: Split between VO/site

- Model 2: Pilot do all storage write operation
  - Site only see VO pilots as owners (+paths)
  - Pilot pulls file before job (check ACLs), push to job env.
  - Job can only read/write local files
  - Pilot take files from job env, push them (log ownership)
- Advantages:
  - No proxy delegated down to the job
- Cost/complications:
  - Pilot has to implement ACLs and log ownership (paths?)
  - No file operation during job: checkpoints?

# Storage-?: Other models?

- Is there any other model possible? Variations?
- What do VOs need/want to do?