

Frameworks

- Category I: Uniquely Exascale
 - **Resilience API and Utilities.**
- Category II: Exascale plus trickle down
 - Multi-institutional/multi-project collaboration plan
 - **Tool chain development/selection**
 - **Programming model evaluation/adoption**
 - **Data placement**
 - Multi-component simulation Utilities
 - **Software libraries access**
- Category III: Primarily Sub-exascale.