Key Features

**Participation**
- **Mutual exclusion**
- **Support** irregular and adaptive applications; support construction of sophisticated parallel applications and parallel libraries
- **Scalability**
- **Orthogonality**
- **Multithreading**
- **Performance**
- **Portability**
- **Interoperability**

**Topology**
- **Predicated asynchronous copy**: optionally wait for an event before starting the copy; optionally post an event upon completion
- **Binding**
- **Support**

**Organization**
- **Team**
- **Topology**
- **Object**

**Mutual exclusion**
- **Lock**
- **Release**
- **Lockset**
- **Critical**

**Coordination**
- **Event**
- **Synchronization**
- **Notify**

**Collective operations**
- **All-to-all communication**
- **One-to-all communication**

**Asynchrony**
- **Predicated asynchronous copies**

**Multithreading & function shipping**
- **create**
- **execute**

**Remote pointers**
- **remote_coarrays**
- **remote_coarray**

**Memory view**
- "First, consider work distribution. A single program is replicated a fixed number of times, each replication having its own set of data objects. Each replication of the program is called an image."

**Example 1: Team and Coarray allocation**
- **Team**
- **Coarray declaration**
- **Allocate**

**Example 2: Function shipping**
- **Subroutine**
- **Allocate**
- **Buffer**
- **Send**
- **Receive**

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