

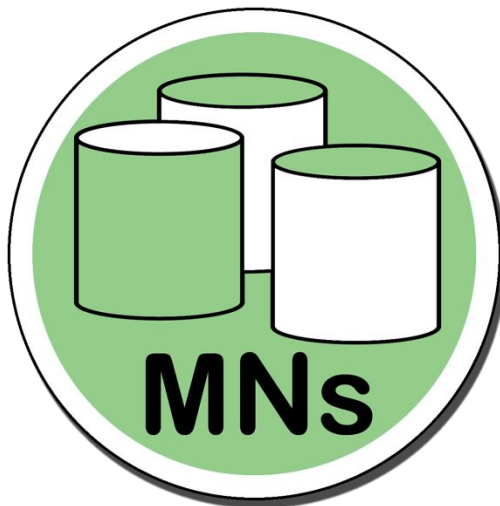
Member Node Topics: Synchronization

DataONE Member Node Forum
2016-09-01

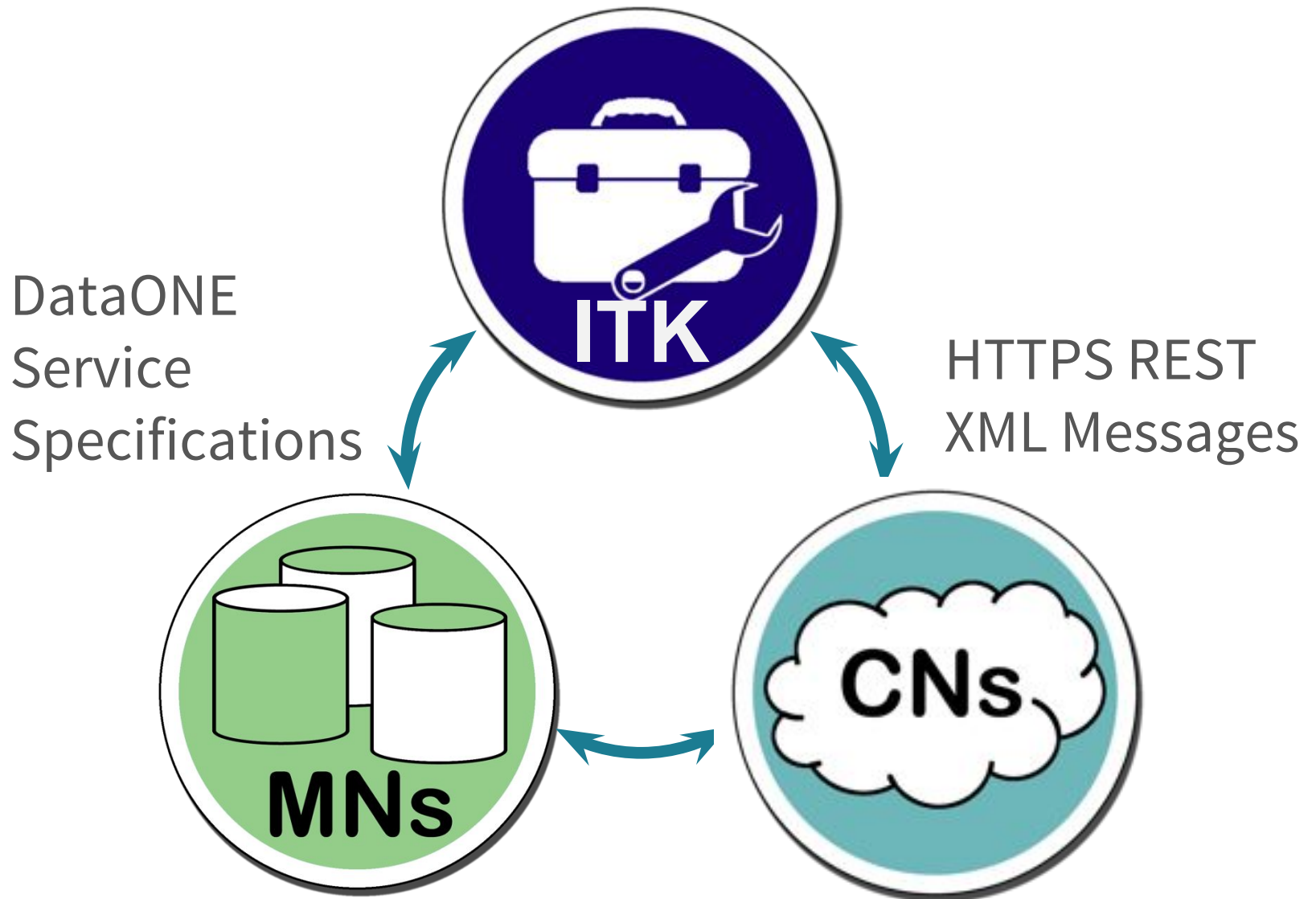
DataONE is a collaboration among many partner organizations, and is funded by the US National Science Foundation (NSF) under a Cooperative Agreement. This material is based upon work supported by the National Science Foundation under Grant Numbers 0830944 and 1430508. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



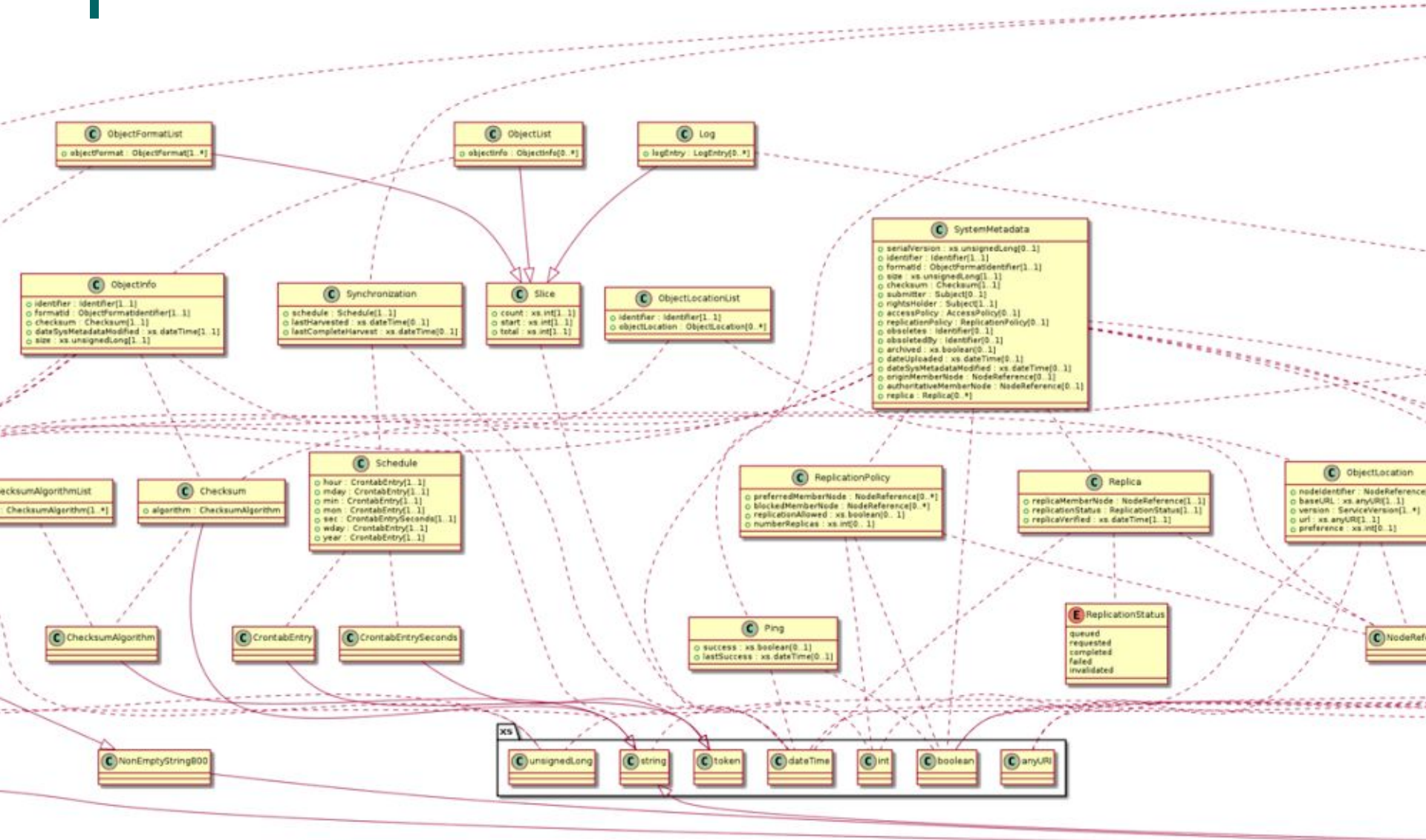
Three Components of DataONE



Three Components Integration



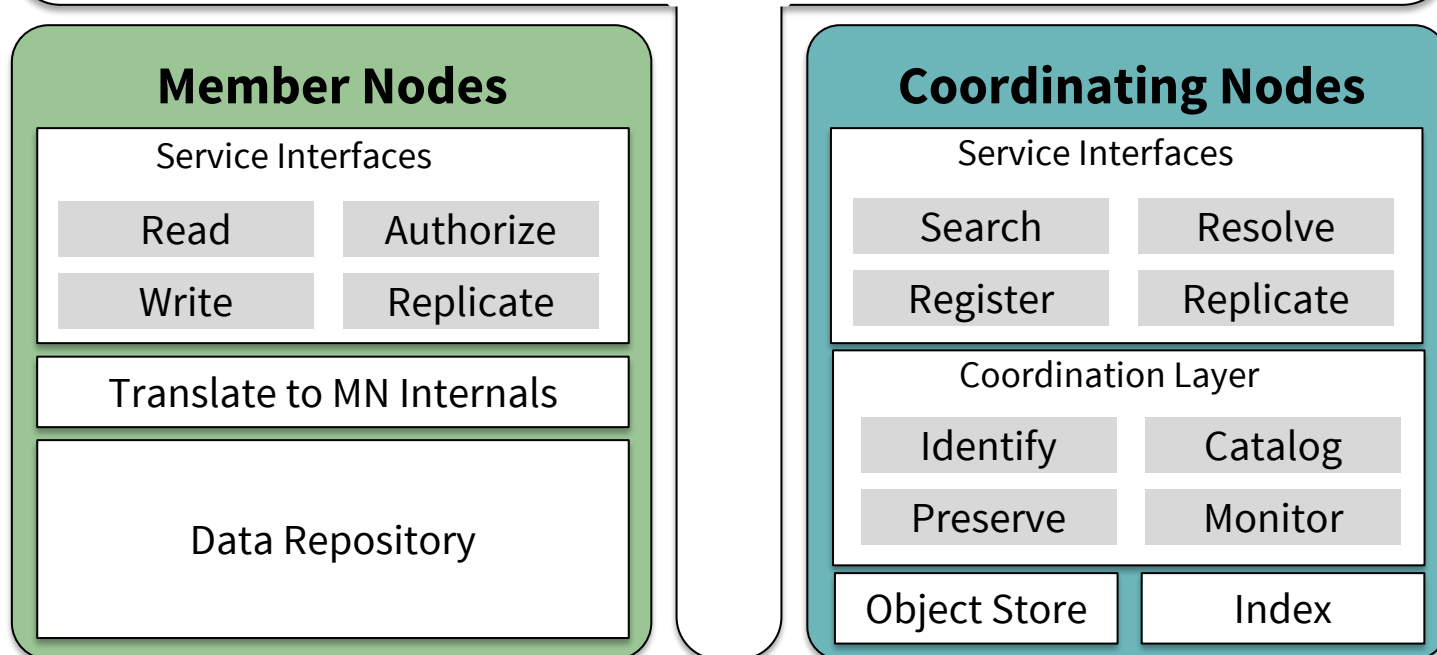
curl.dataone.org/architecture



Shown in a High Level Design

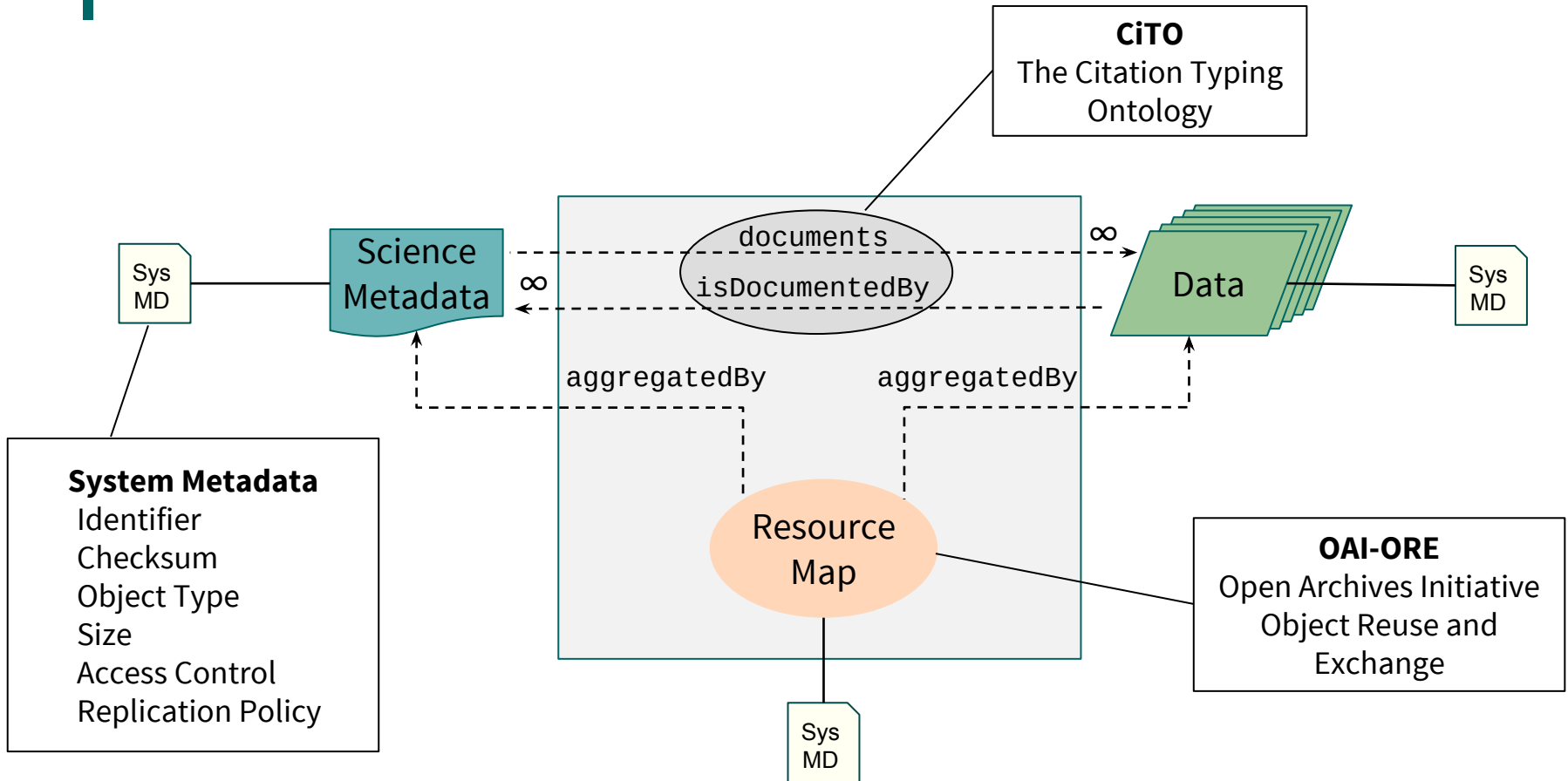


Service Specifications



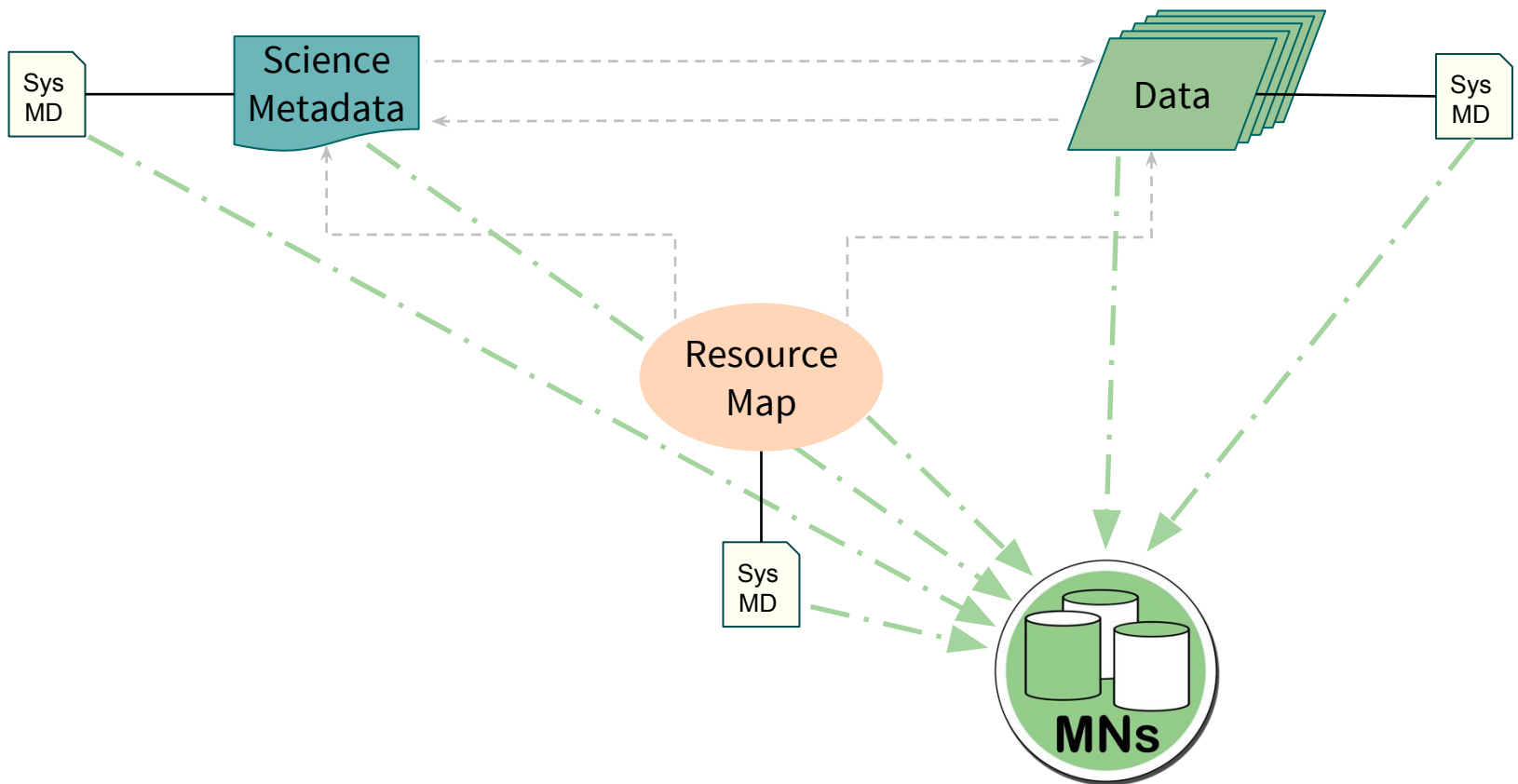
Objects in DataONE

Objects and Packaging



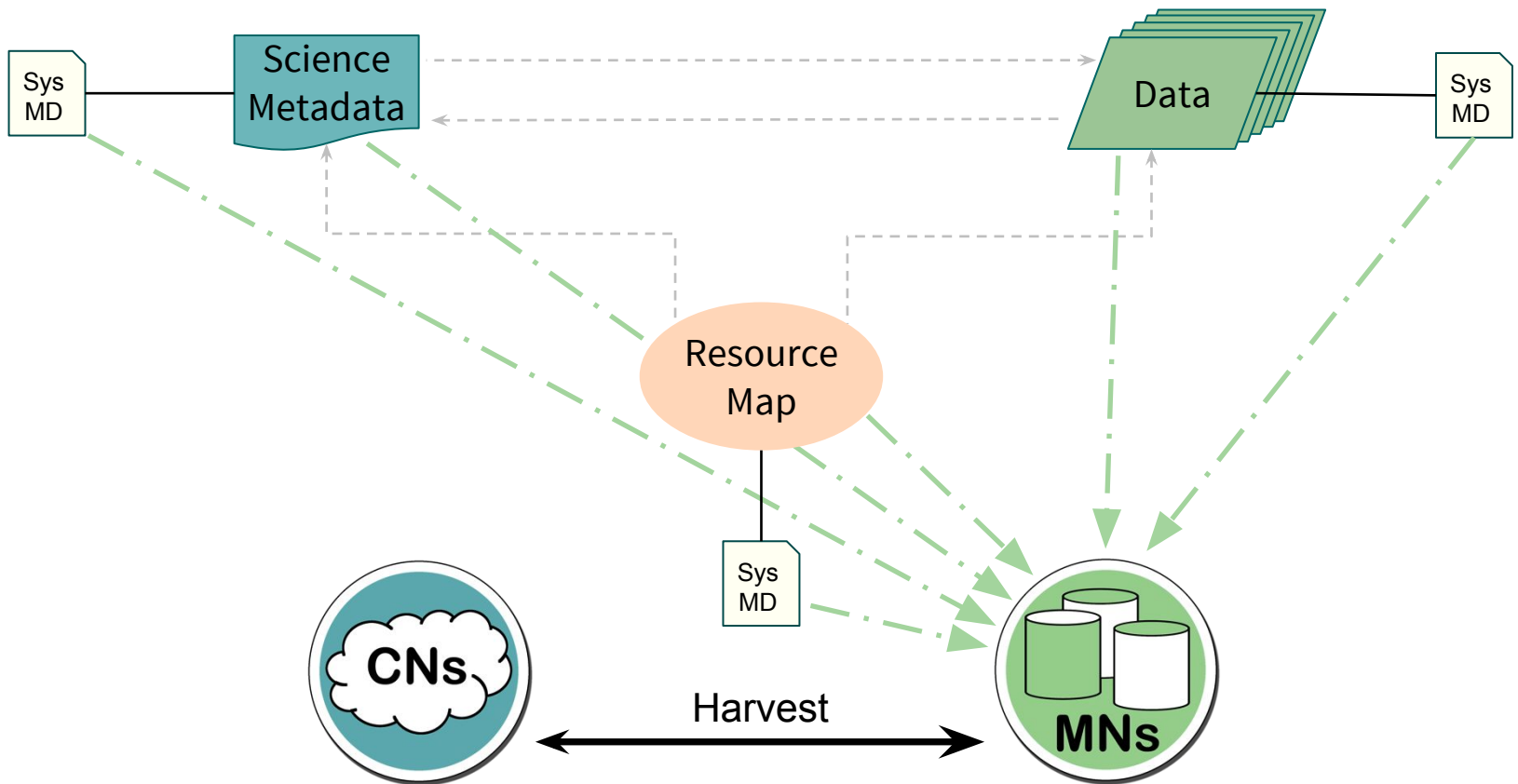
Objects in DataONE

Everything on Member Nodes



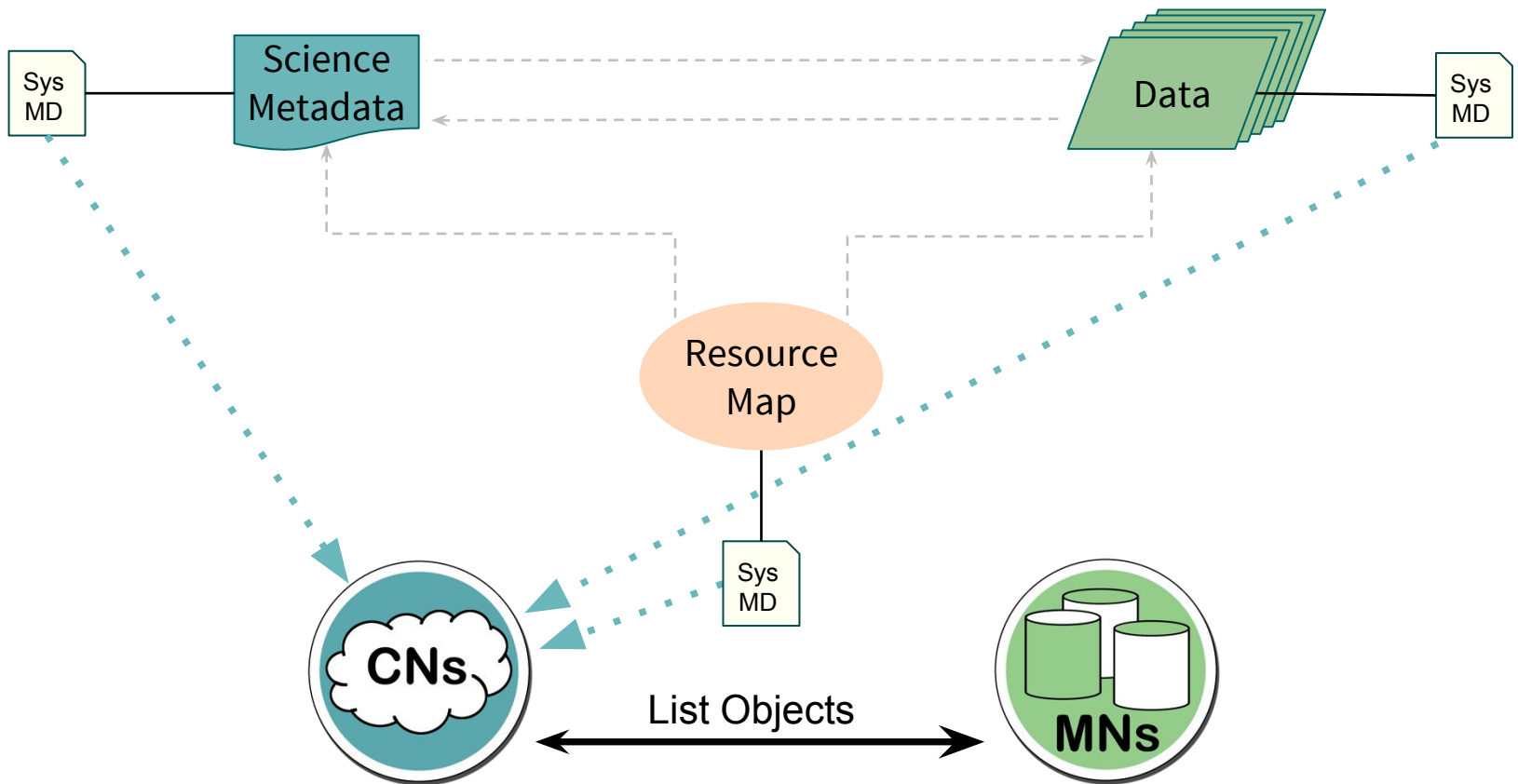
Objects in DataONE

Synchronization to Coordinating Nodes



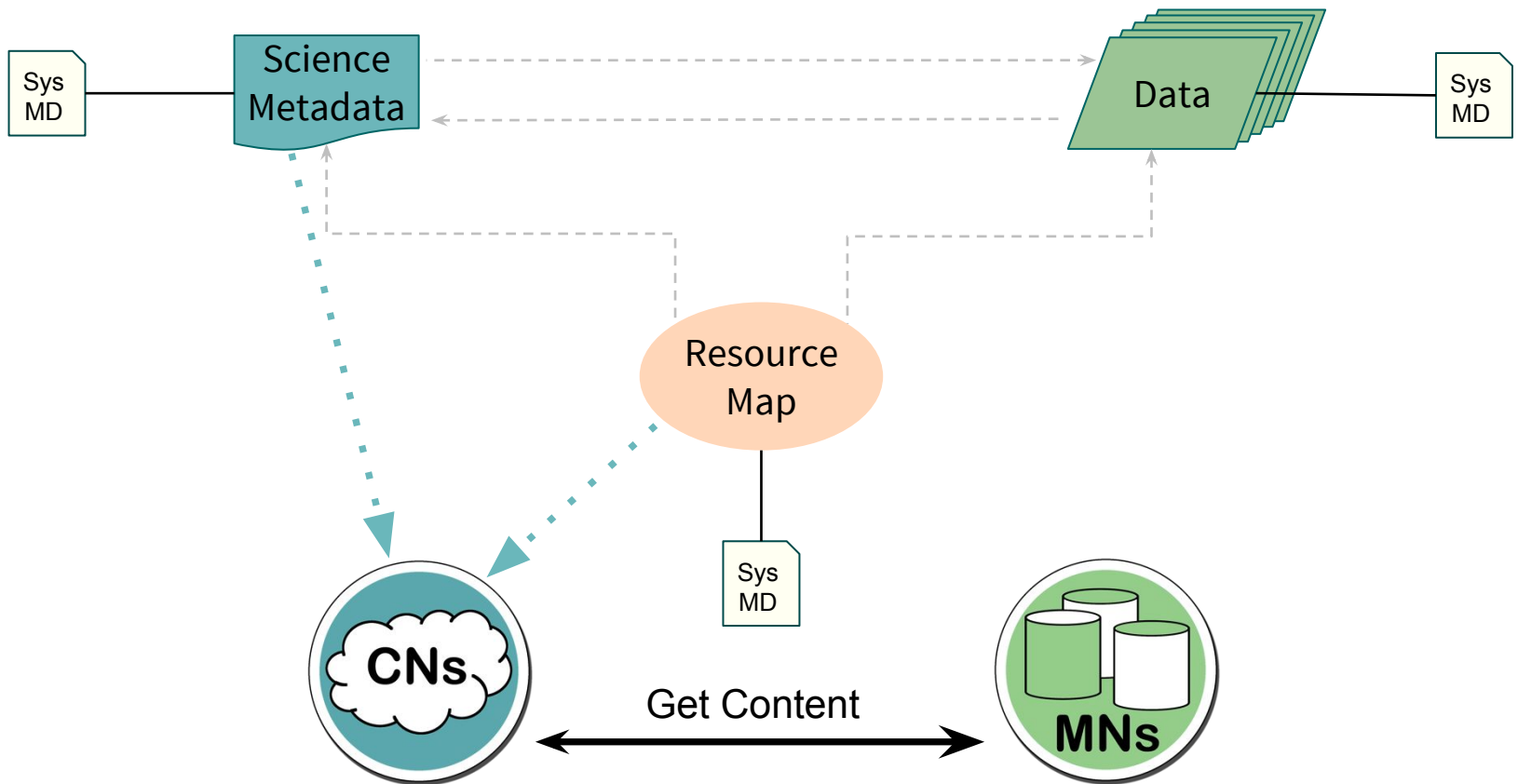
Objects in DataONE

Synchronization to Coordinating Nodes



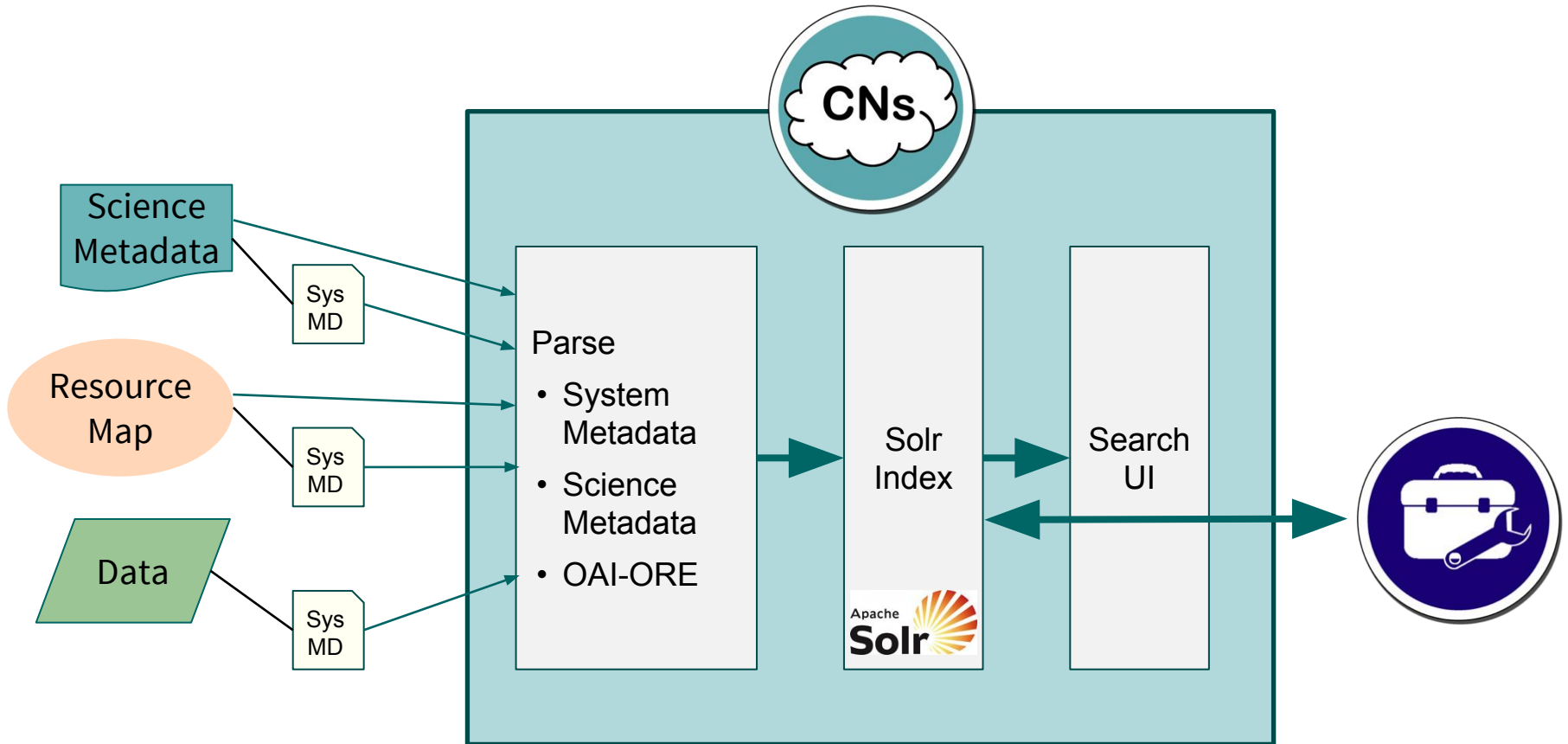
Objects in DataONE

Synchronization to Coordinating Nodes

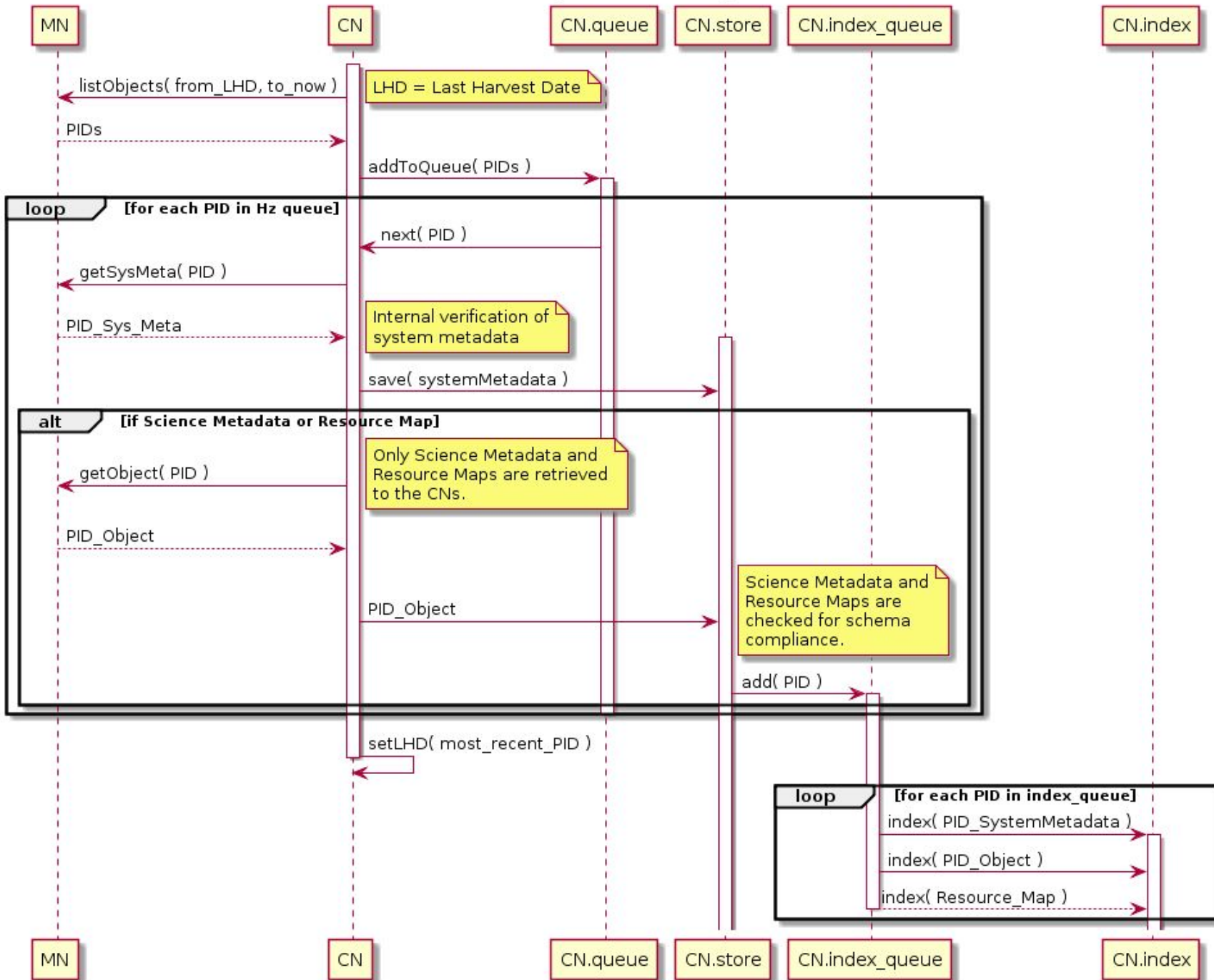


Coordinating Node Processing

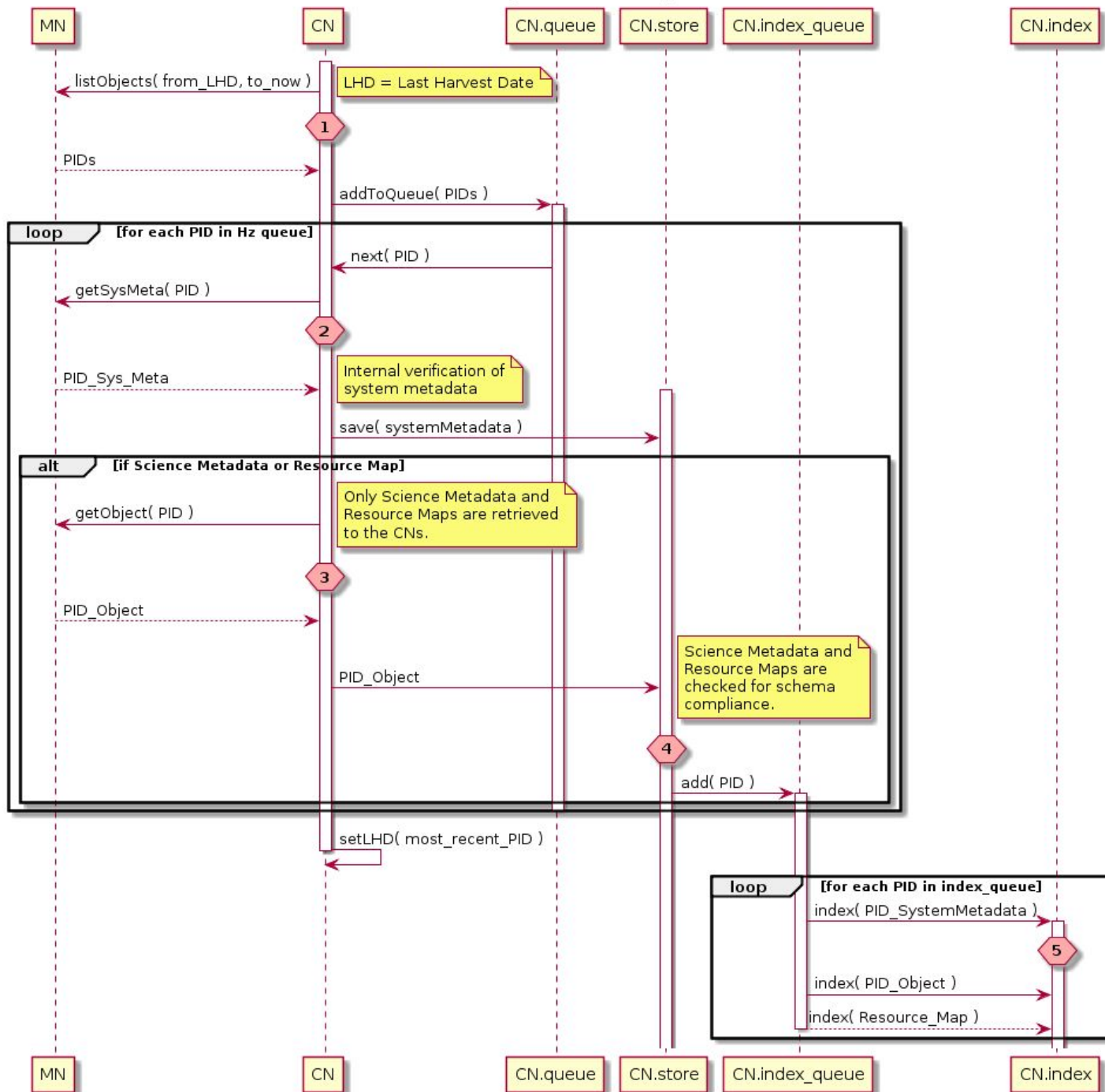
Indexing for Discovery



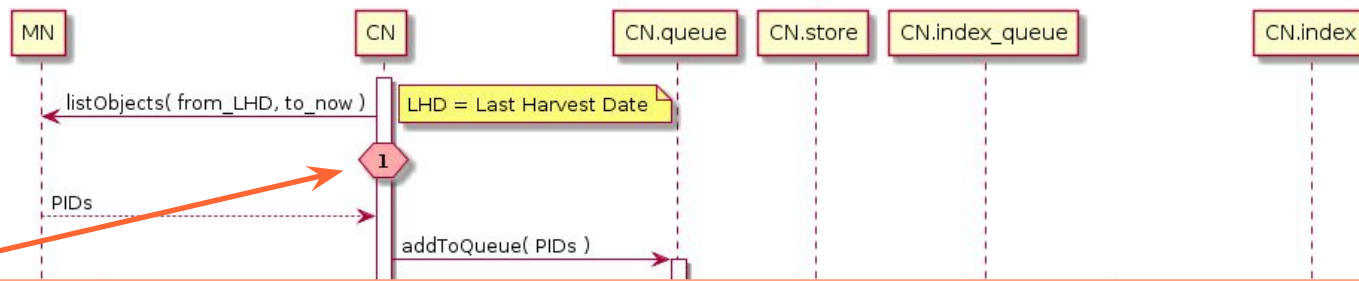
DataONE MN-CN Synchronization (generalized)



DataONE MN-CN Synchronization (generalized)



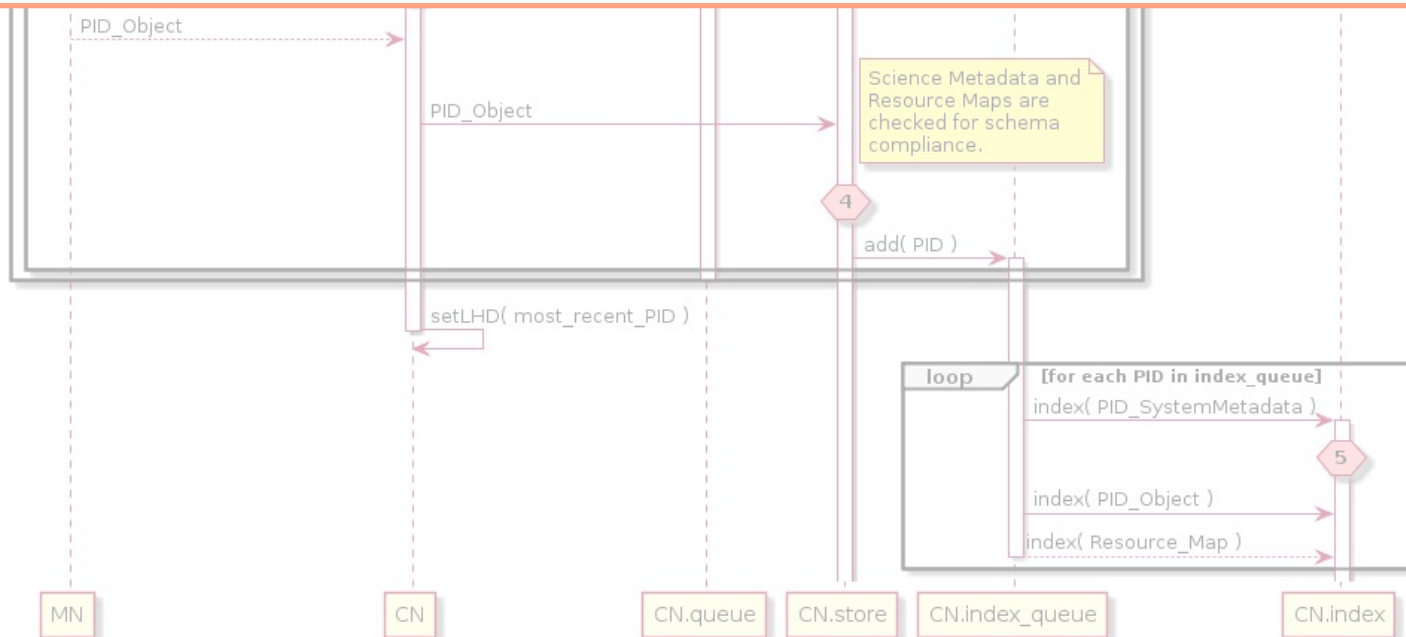
DataONE MN-CN Synchronization (generalized)



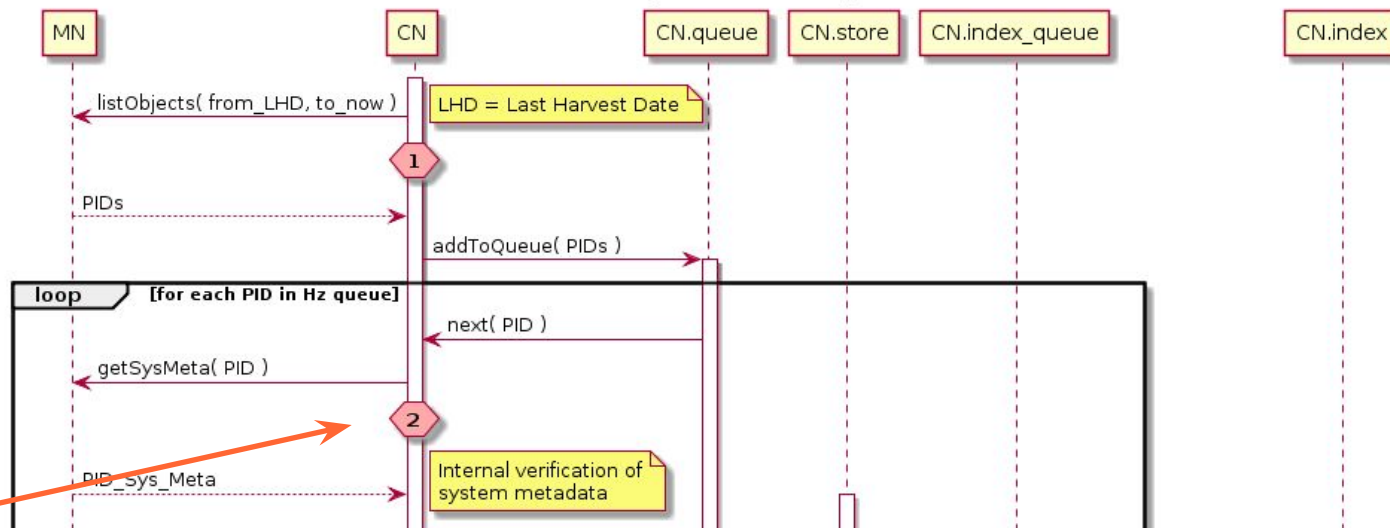
1. List Objects Failure.

PIDs never retrieved from Member Node

- Member Node not registered or not approved
- Member Node document not listing required services
- Network failure
- Authentication or authorization failure
- Member Node response timed out
- Member Node not handling the requested time slice as expected
- Response not in expected format



DataONE MN-CN Synchronization (generalized)



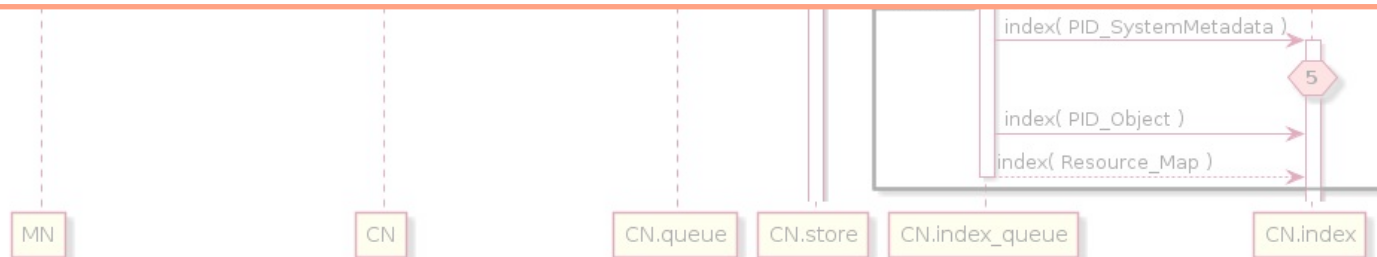
2. Get System Metadata Failure.

Content does not appear in [CN.getSystemMetadata](#), [CN.get](#)

- Network failure
- Member Node response timed out
- Authentication or authorization failure
- Invalid System Metadata
- Duplicate identifier (CN will compare checksums)

Check for [SynchronizationFailed](#) messages on Member Node

Try the v2 method [CN.synchronize\(\)](#) to resubmit a PID.



3. Get Object Failure.

Content does not appear in [CN.getSystemMetadata](#), [CN.get](#)

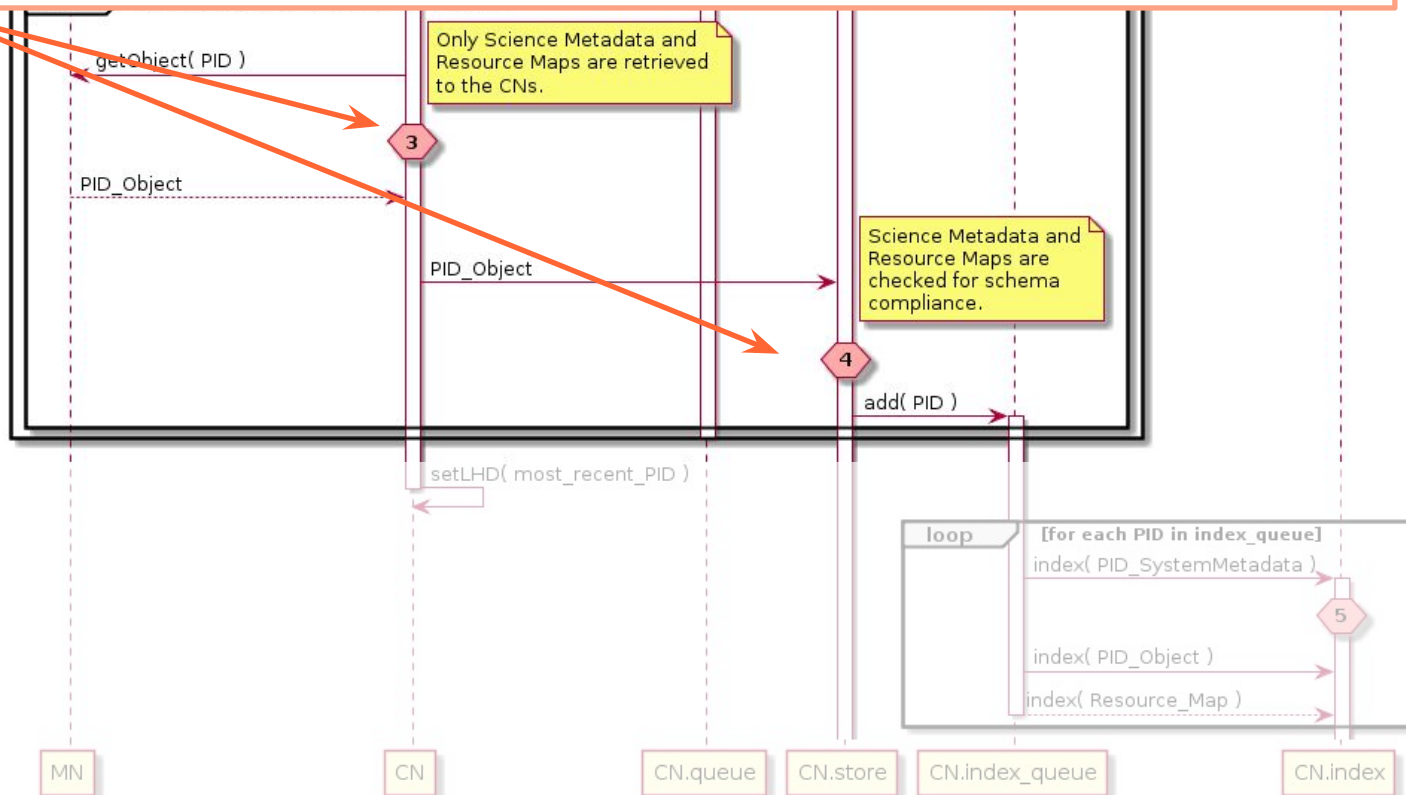
- Network failure
- Member Node response timed out
- Authentication or authorization failure
- Unexpected content type

4. Content Validation Failure

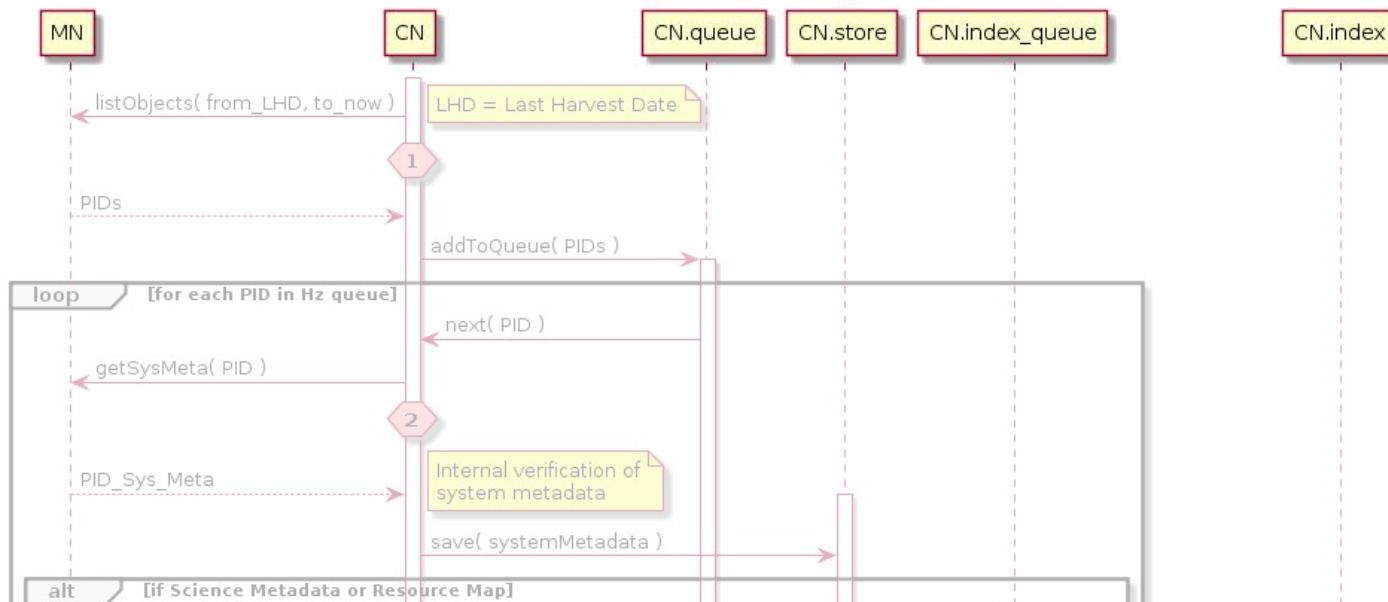
- Bad content transfer (unlikely)
- Schema not registered

Check for [SynchronizationFailed](#) messages on Member Node

Try the v2 method [CN.synchronize\(\)](#) to resubmit a PID.



DataONE MN-CN Synchronization (generalized)

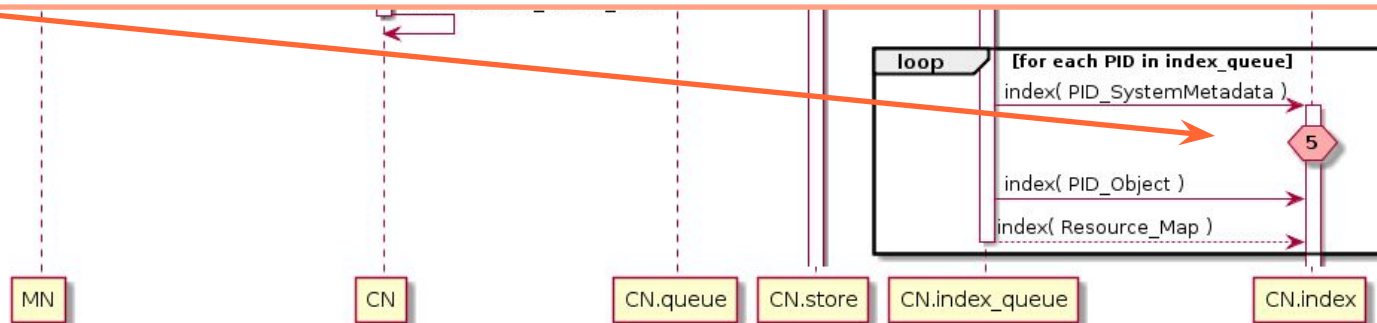


5. Indexing Failure.

Apparent when content not discoverable in [search index](#).

- Content not replicated between Coordinating Nodes
- No indexer rules available
- Indexer rule failure
- Incomplete package contents
- Unexpected content formatting for parser rules

CN administrators check CN replication for content.



Technical Resources

Education

- purl.dataone.org/architecture
- ...architecture/design/UseCases/06_uc.html
- dataone.org/previous-webinars

Communications

- mnforum@dataone.org
- developers@dataone.org
- [#dataone](http://irc.ecoinformatics.org)

Sources

- repository.dataone.org/software/cicore
- github.com/DataONEorg

Tools

- search.dataone.org... [search-dev](http://search-dev.dataone.org)... [search-sandbox](http://search-sandbox.dataone.org)... [search-stage](http://search-stage.dataone.org)...
- cn.dataone.org/cn/v2/diag/subject /sysmeta /object
- Browser, curl, Python, Java libraries
- examples.dataone.org