Versioning

ESRI ArcSDE Geodatabases

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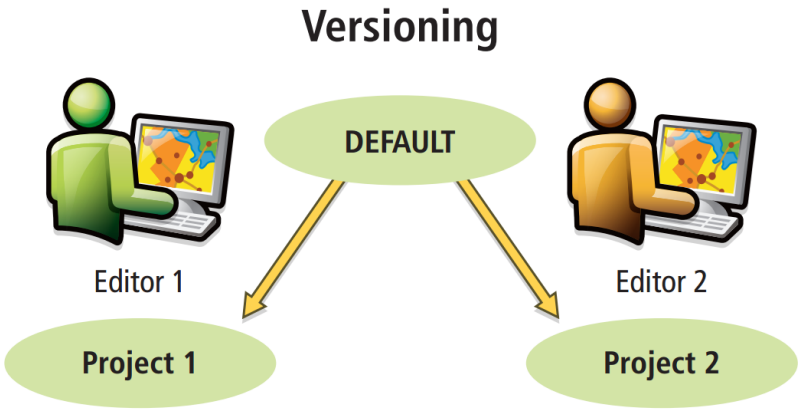
Introduction

- Versioning allows multiple users to work on the same geodatabase
- Beneficial for workflow management in enterprise ArcSDE geodatabases
  - Modeling different discrete changes
  - Modeling what-if scenarios without affecting the original datasets
- Provide a framework for security management and quality assurance in data-editing
- Support historical archiving and geodatabase replication

Version Creation

- Every enterprise ArcSDE geodatabase has a default version named DEFAULT

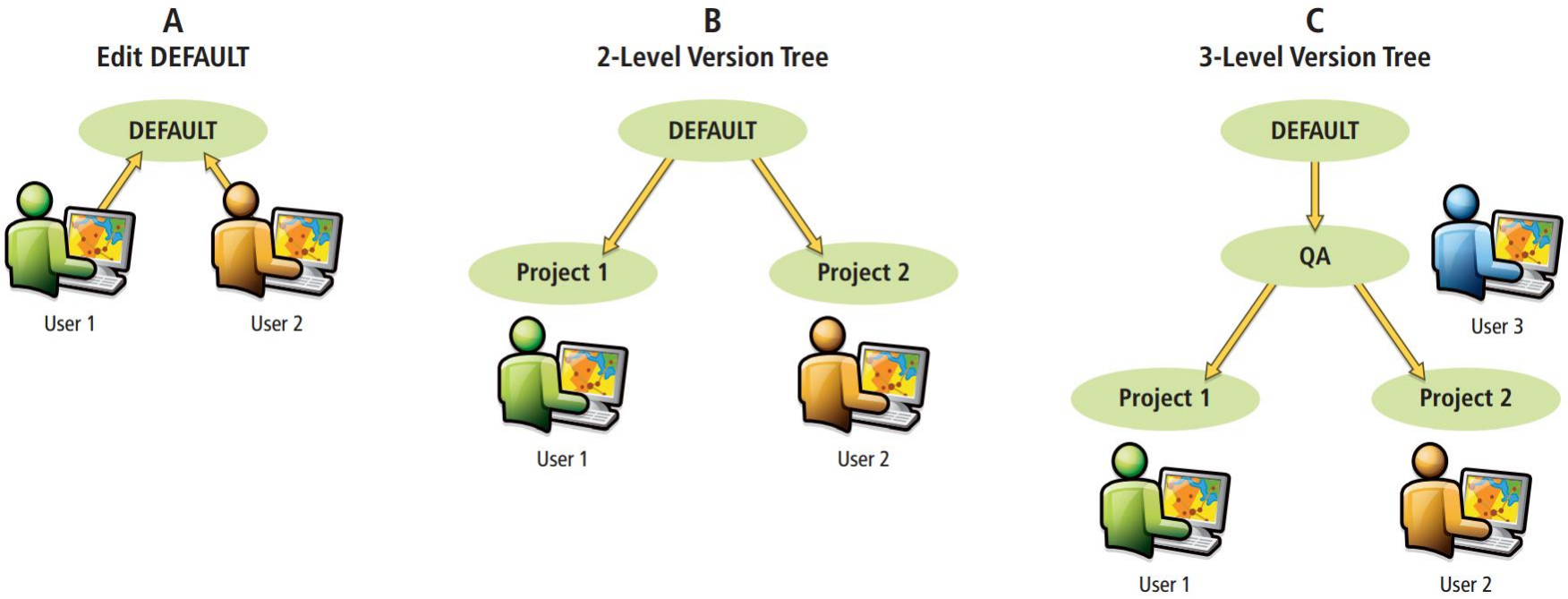


- Project 1 and Project 2 are the child version, which can be created by users at the same time.
- All changes to a dataset are recorded in associated tables known as delta tables, which contain A (adds) and D (delete) tables.

Source: www.esri.com

Version Workflows

- Versioning supports many complex workflows



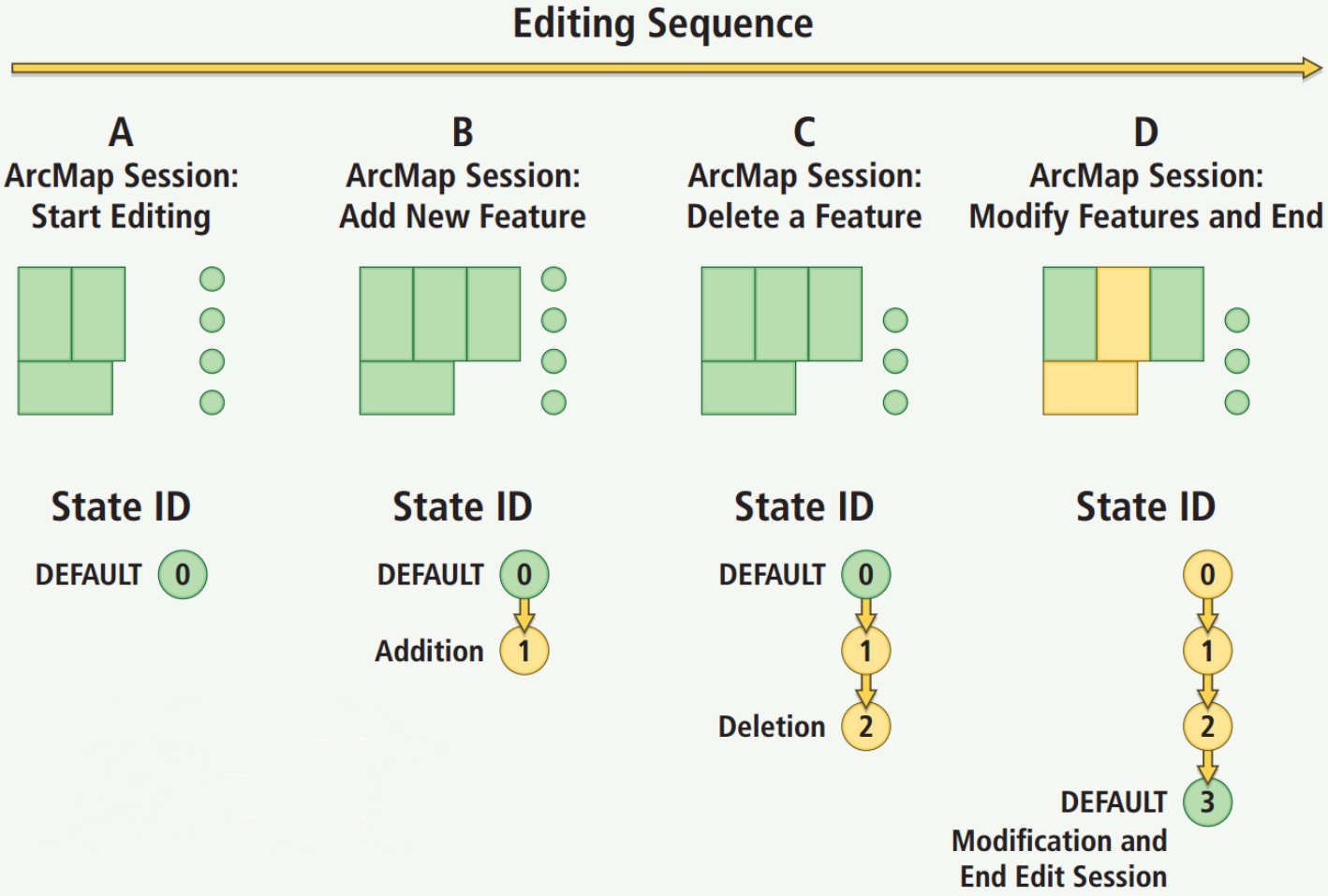
Source: www.esri.com

Database States and versions

- A version references a specific database state at a specific point in time.
- Every edit operation performed in the geodatabase creates a new database state.
- State ID values apply to any and all changes made in the geodatabase

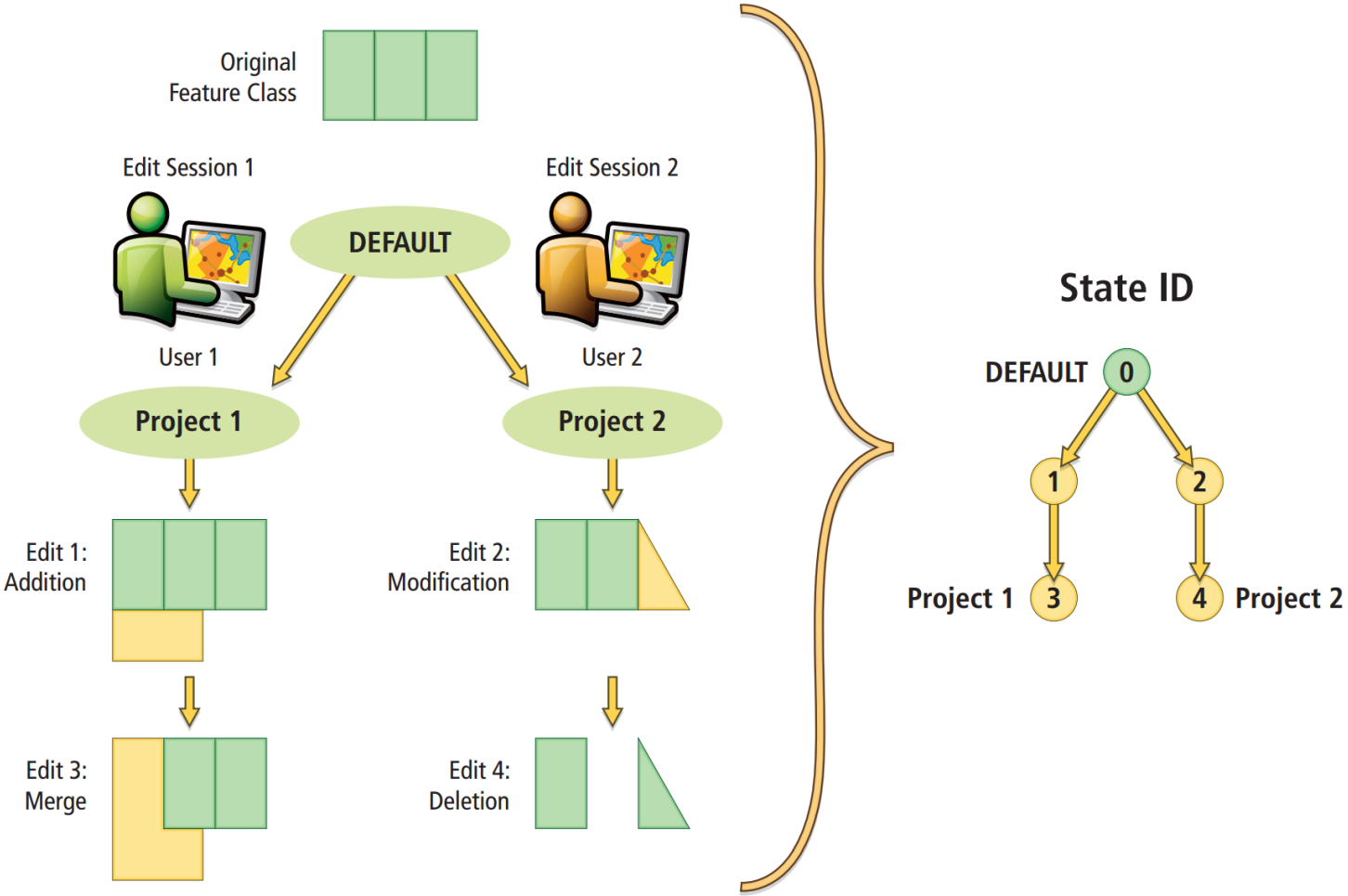
Source: www.esri.com

Database States and Versions – Examples



Source: www.esri.com

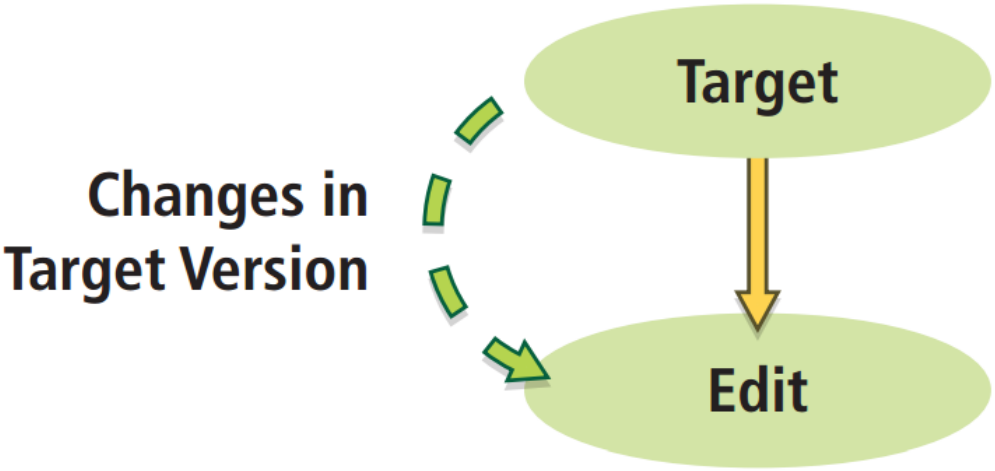
Database States and Versions – Examples



Source: www.esri.com

Reconcile

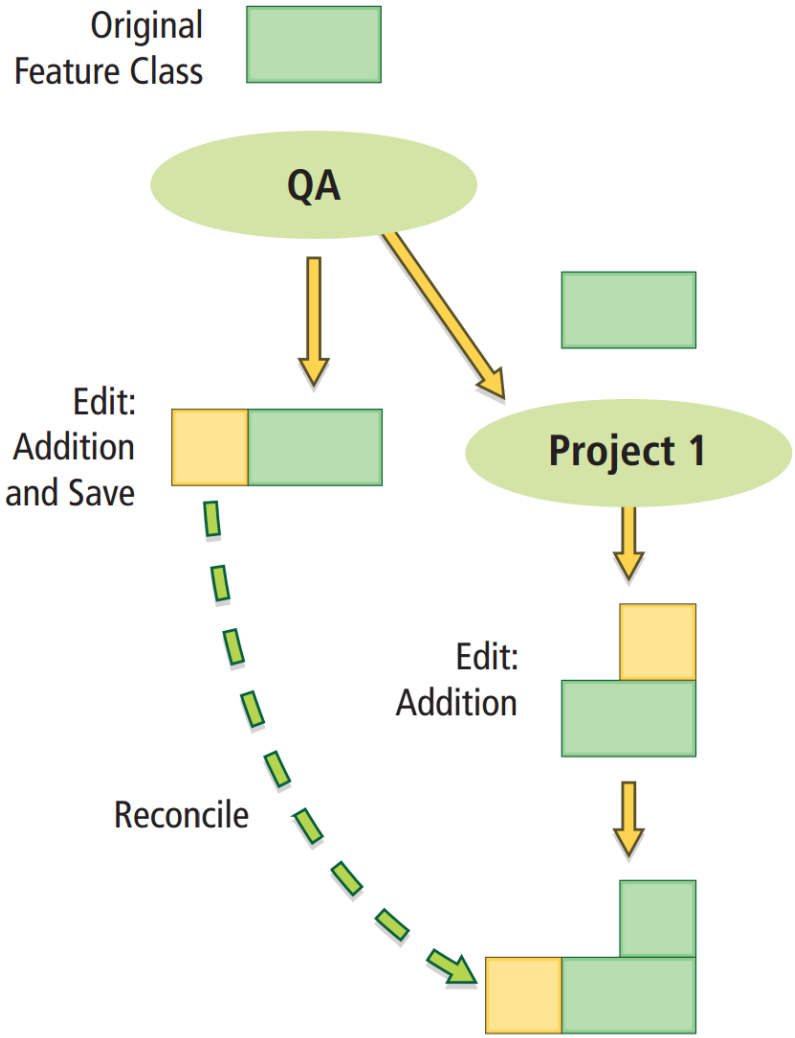
- Reconciling is the first step in merging edits between two versions.



- Edits from ancestor version (target version) are brought into the version being edited in ArcMap (edit version).

Source: www.esri.com

Reconcile Process - Example



Source: www.esri.com

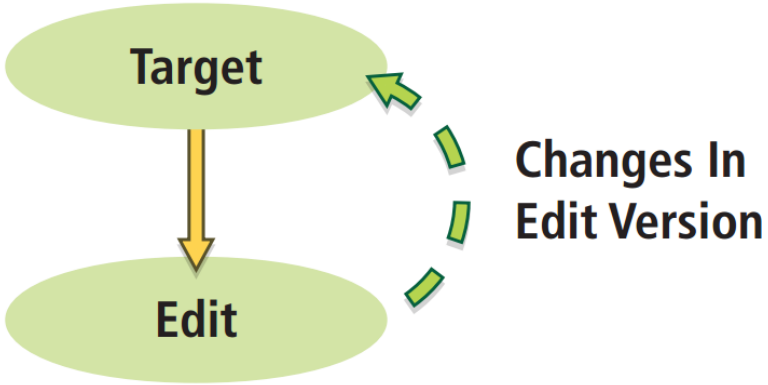
Possible conflicts during Reconciliation

- Conflicts can occur in two scenarios
  - when the same feature is updated in both the target and edit versions
  - when the same feature is updated in one version and deleted in the other
- ArcGIS finds in conflicts by
  - Object ID
    - a feature is identified to be in conflict when any part of it (e.g., geometry or attributes) has been edited in both the target and edit versions
  - Attributes
    - a feature is identified to be in conflict only when the same attribute (e.g., the same attribute field) has been edited in both the target and edit versions.
- Automatic/Manual conflict resolution
  - In favour of target/edit version

Source: www.esri.com

Post

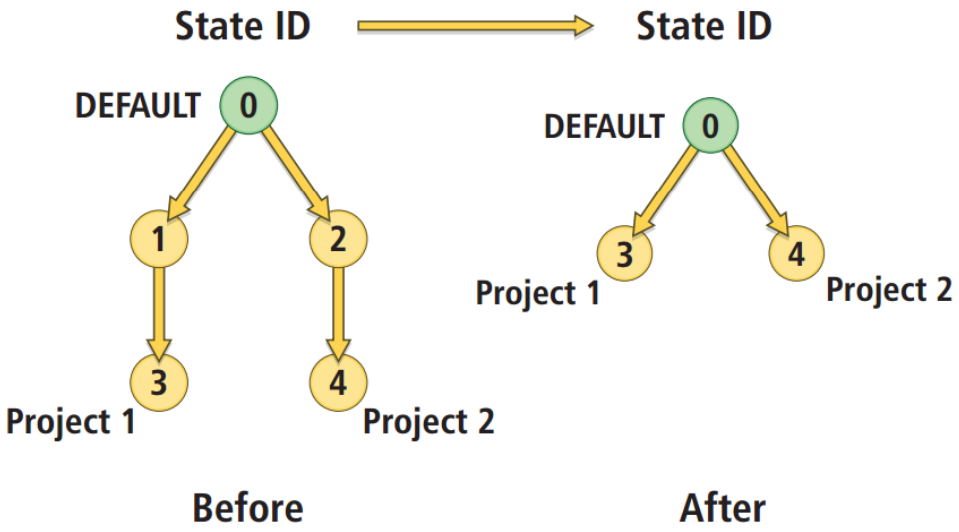
- This is the second step when merging edits between two versions
- This process must always follow a reconcile operation
- A post process synchronizes the current edit version with the target version
- All edits made in the edit version are saved into the target version, making both versions identical



Source: www.esri.com

Compress

- An actively edited enterprise ArcSDE geodatabase may accumulate hundreds of thousands of state IDs and a deep and complex state tree. This can negatively impact performance.



- Periodically, the ArcSDE administrator must compress the ArcSDE geodatabase to remove any states not referenced by a version
- A compress operation can reduce the depth of the state tree and helps maintain performance.

Source: www.esri.com