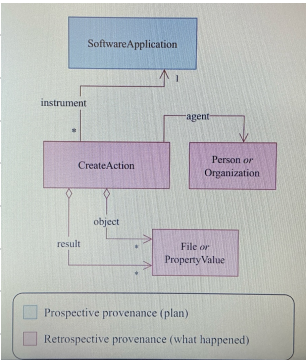
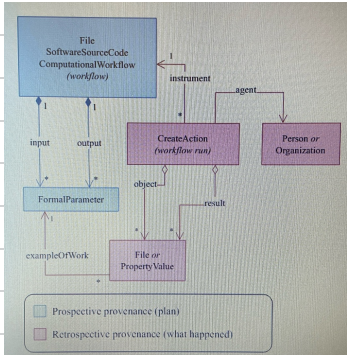


Recording provenance of workflow runs with RO-Crate

- Process Run Crate:** captures the details of a single process execution; granular focus on individual tasks
- Workflow Run Crate:** encompasses the execution of an entire workflow, including multiple interconnected processes; broader focus on entire workflows/their execution
- Provenance Run Crate:** captures the lineage (the provenance) of data and computational steps; comprehensive focus on the lineage/history of data
- Workflow Run RO-Crate (WRROC):** an extension of RO-Crate for rep. computational workflow

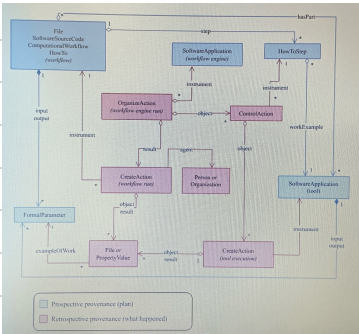


Process



Workflow

Provenance



This paper presents three “Workflow Run Ro-Crate” (WRROC) models with various accompanying implementations of such profiles.

| Impl.      | Profile    | Version | URL/DOI | Example |
|------------|------------|---------|---------|---------|
| runcrate   | Provenance | [46]    |         | [74]    |
| Galaxy     | Workflow   | [75]    |         | [49]    |
| COMPSS     | Workflow   | [53]    |         | [52]    |
| Streamflow | Provenance | [56]    |         | [76]    |
| WfExS      | Workflow   | [77]    |         | [57]    |
| Sapporo    | Workflow   | [62]    |         | [63]    |
| Autosubmit | Workflow   | [69]    |         | [71]    |