Publication date:
2010

Link to publication

University of Bath
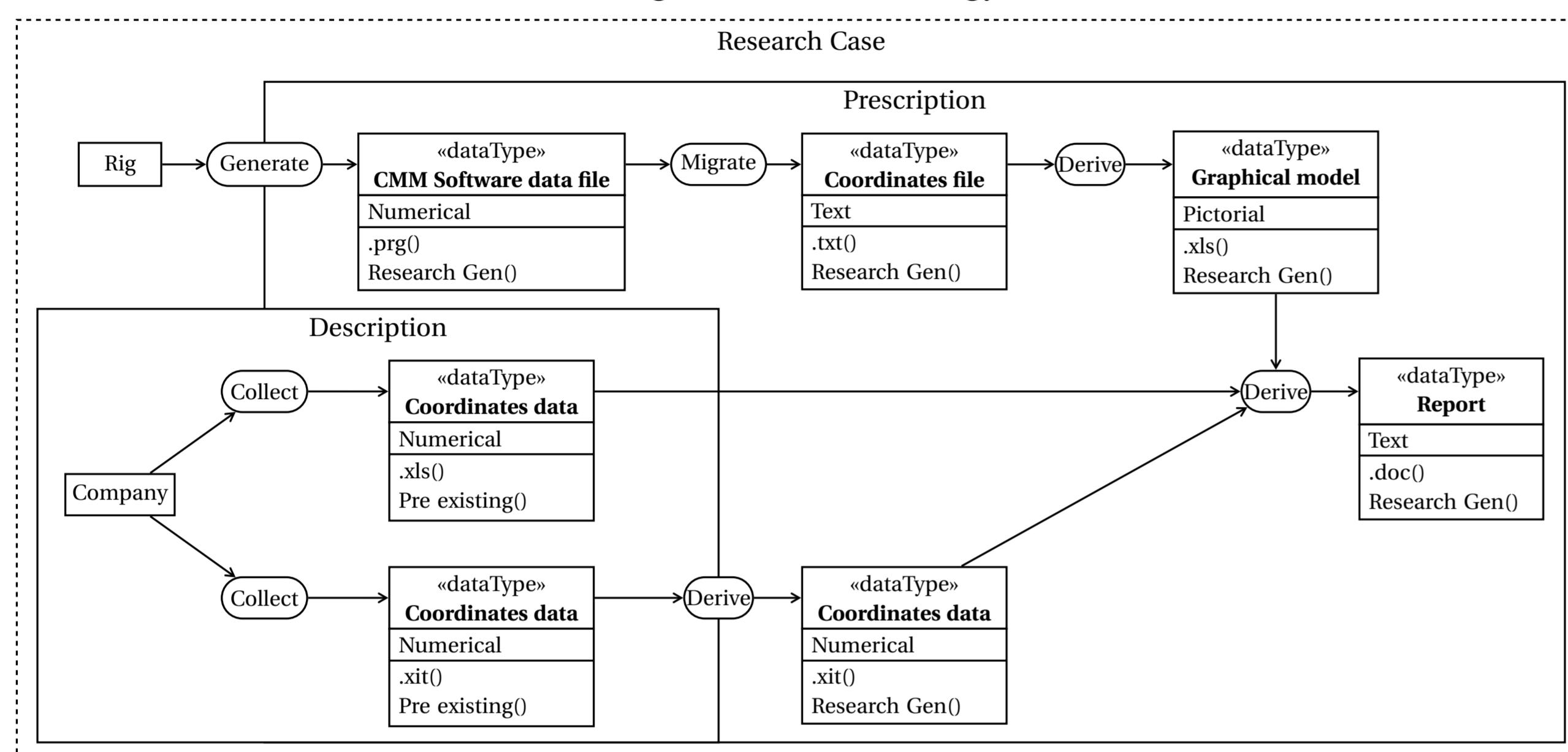
Modelling the Development of Research Data

ERIM

The RAID Methodology

The Research Activity Information Development (RAID) Methodology is a formal technique for indicating how different data records relate to one another in the context of the research process. It is based on UML and the ERIM Data Management Terminology.

Research Case

Prescription

Rig → Generate → «dataType» **CMM Software data file** / Numerical / .prg() / Research Gen() → Migrate → «dataType» **Coordinates file** / Text / .txt() / Research Gen() → Derive → «dataType» **Graphical model** / Pictorial / .xls() / Research Gen()

Description

Company → Collect → «dataType» **Coordinates data** / Numerical / .xls() / Pre existing()

Collect → «dataType» **Coordinates data** / Numerical / .xit() / Pre existing() → Derive → «dataType» **Coordinates data** / Numerical / .xit() / Research Gen()

Derive → «dataType» **Report** / Text / .doc() / Research Gen()

The diagram above shows a data case from a research activity. Seven data records are shown. It is possible to track the evolution of the data contained in the final result back to raw data generated using an experimental rig, and pre-existing data collected from an industrial partner.

Terminology: record types

Data case. Set of data records associated with some discrete research activity.
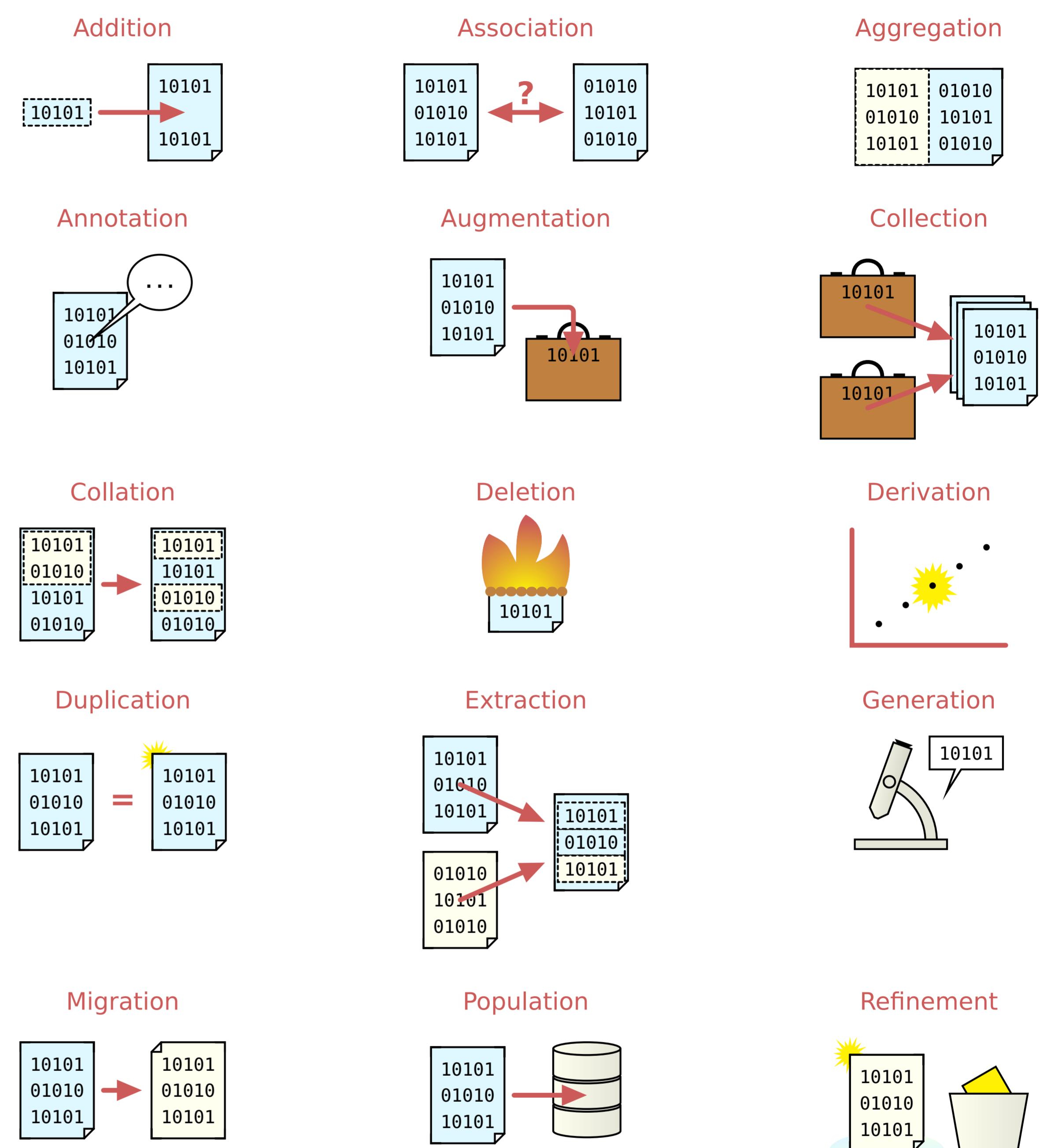
Data record (DR). Data object constituting evidence of an activity.

- **Associative DR.** Documents the association between other data or data records.
- **Context DR.** Explicitly places in context other data, the research activity or the research object.
- **Experimental apparatus DR.** Digital object analogous to physical experimental apparatus.
- **Research DR.** Describes the research object.
- **Research object DR.** A digital object, or one of a set, acting as the object of research.

Terminology: data development processes

Addition

Association

Aggregation

Annotation

Augmentation

Collection

Collation

Deletion

Derivation

Duplication

Extraction

Generation

Migration

Population

Refinement

Authors

Alex Ball (a.ball@ukoln.ac.uk), DCC/UKOLN, University of Bath

Mansur Darlington, Innovative design and Manufacturing Research Centre (IdMRC), University of Bath

Tom Howard, IdMRC, University of Bath/Technical University of Denmark

Further information