Applying the SDTM to the Janus Data Warehouse

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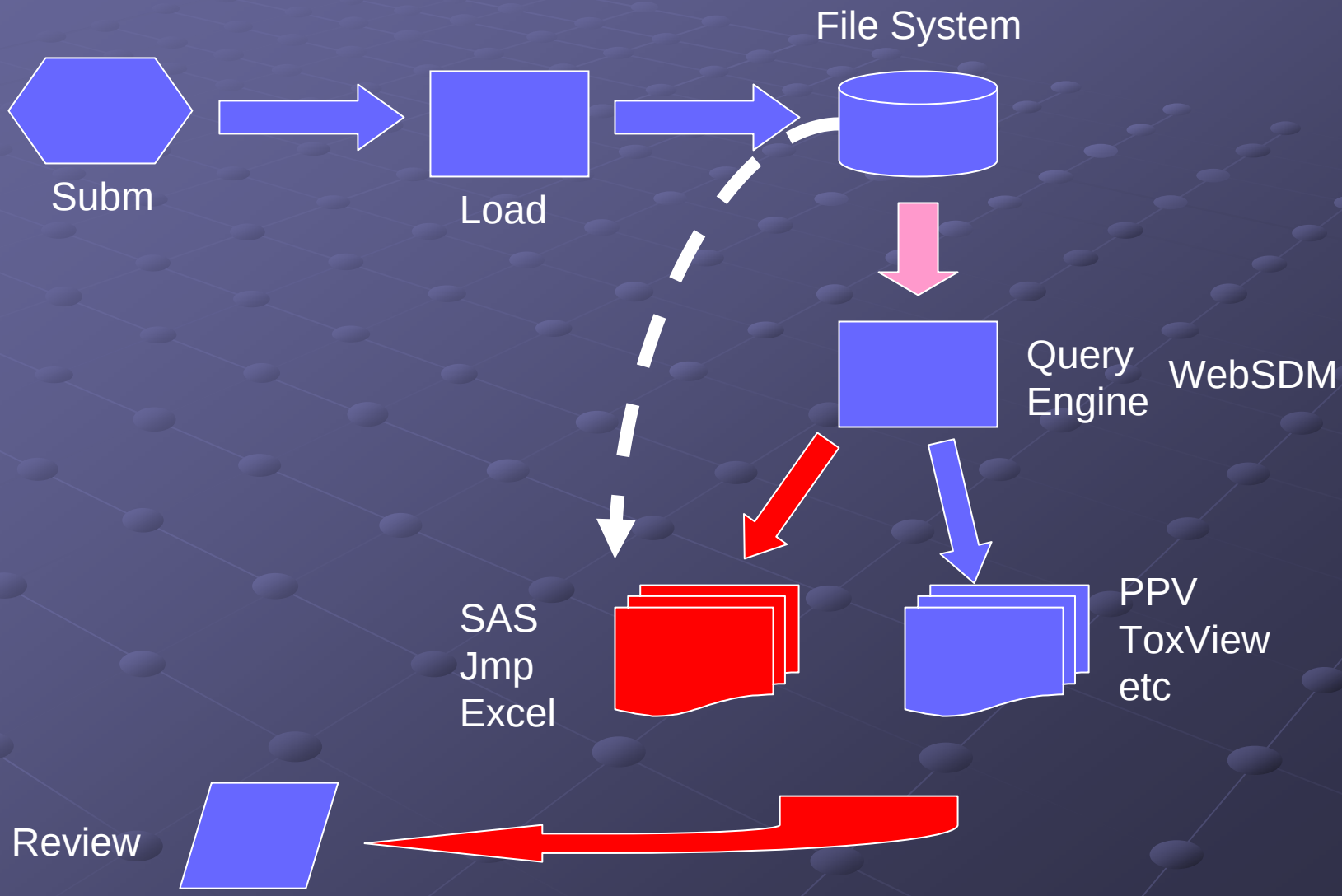
FDA

Data standards are good

- Reviewers can be trained
- Reviewers familiar with format
- Developers can develop consistent tools
- Reviewers can develop consistent procedures

Initial


File System
Subm
Load
Query
Engine
WebSDM
SAS
Jmp
Excel
PPV
ToxView
etc
Review

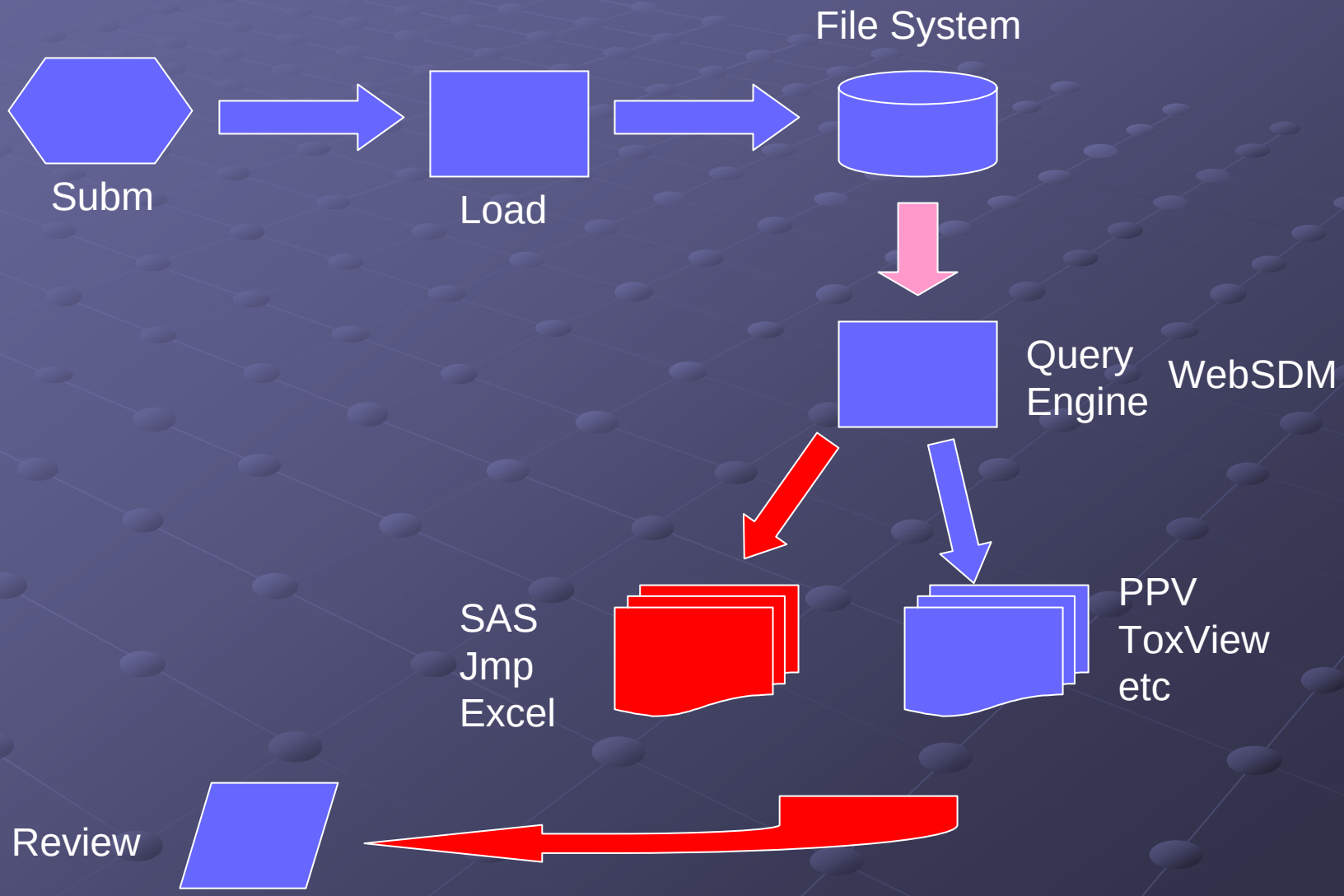
But SDTM is not optimal for reviewers

- Accommodate new data without structural changes
- Facilitate the assembly of submissions
- Ensure submission integrity
- And help reviewers, too.

Raw datasets are awkward

- One observation per row
- High degree of normalization

Initial


File System
Subm
Load
Query
Engine
WebSDM
SAS
Jmp
Excel
PPV
ToxView
etc
Review

Some difficult questions

- What was the relationship between plasma levels of drug and some pharmacodynamic parameter measured in 3 studies?
- How many women over age 55 were in the whole development program?
- How many of those women received a dose over 20 mg or were treated for more than 7 days?

Some difficult questions

- Is it safe to use placebo in short-term hypertension studies?
  - 98 NDAs
  - About 10 person-years
- Is there a placebo effect with ambulatory blood pressure monitoring?
  - Meta-analysis of patient-level data
  - 35 studies
  - About 10 person-years

Some questions remain difficult

- In the Vioxx development program as a whole, how many cardiovascular events were there?
  - What was the timing of those events?
  - What were the risk factors?
- How did that compare with other members of the class?

Audit

- Reviewing should preserve a trail of what was done.
- Secondary review should be able retrace these steps.

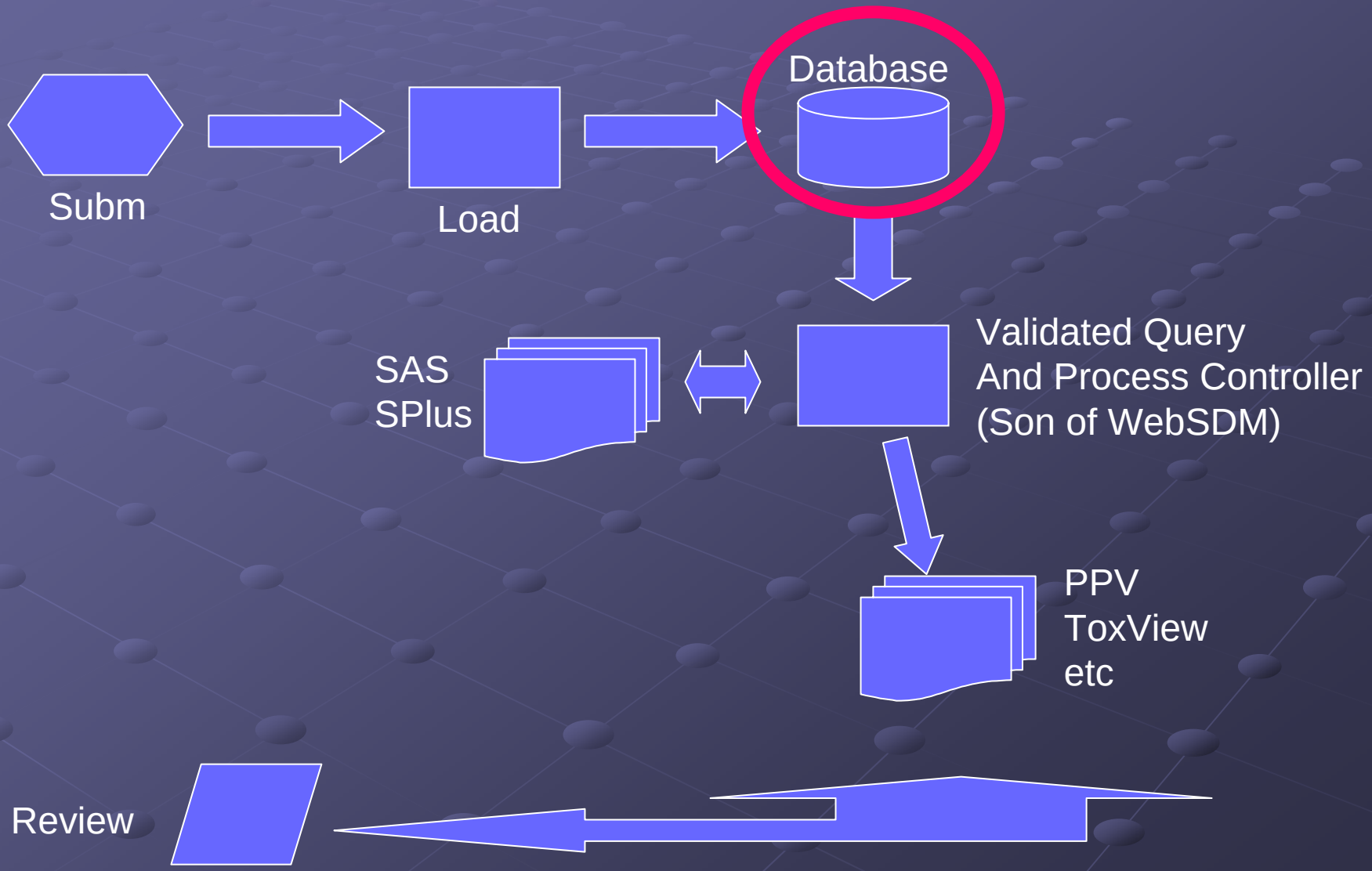
Communications

- When a reviewer has done something interesting, he or she ought to be able to communicate that to all parties unambiguously.

Need

- View of the data through reviewer-centric tools
- Cross-study analyses
- Cross-application analyses
- Audit
- Communications

Final


Subm
Load
Database
SAS
SPlus
Validated Query
And Process Controller
(Son of WebSDM)
PPV
ToxView
etc
Review

Clinical Trials Data Warehouse

Past studies

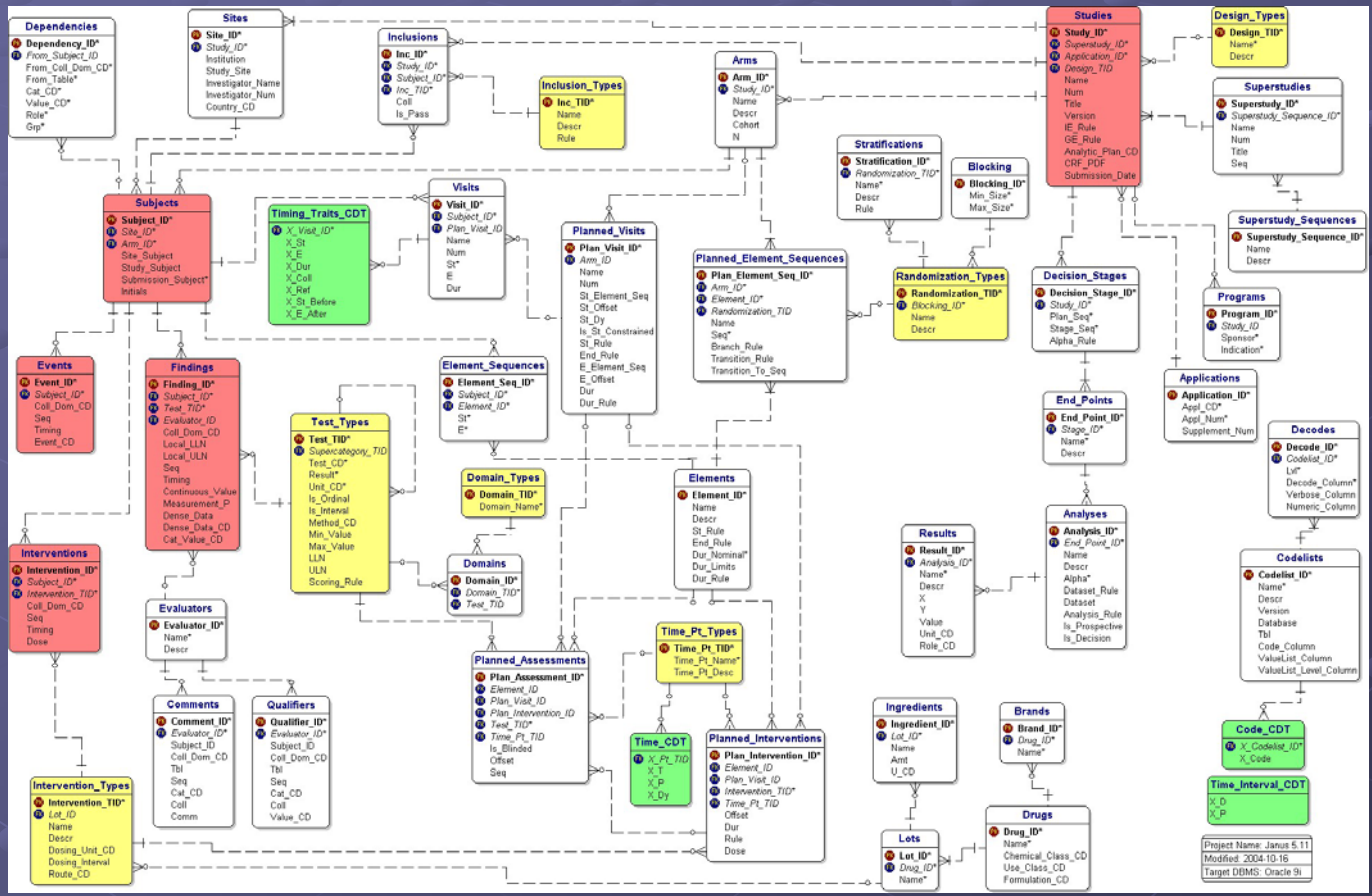
Janus

Current study

Contributors

- Jay Levine
- Chan Russell
- David Fram
  - all Lincoln Technology
- Randy Levin (FDA)
- Joyce Hernandez (IBM)
- CDISC SDS team

JANUS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Dosing_Interval
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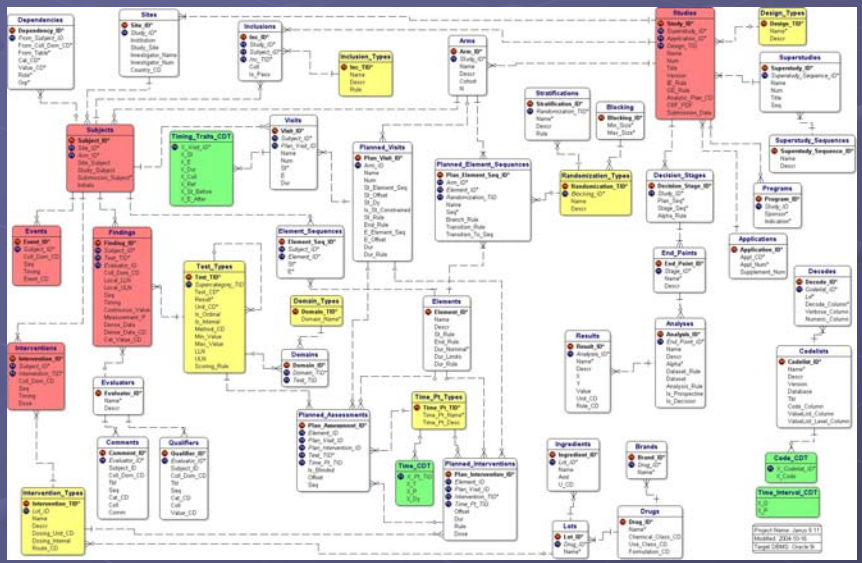
Modified: 2004-10-16
Target DBMS: Oracle 9i



- Observations
- Protocol
- Studies in context
- Analytic plan & results
- Coded list management

JANUS is simpler than SDTM

- Fewer tables than datasets
  - One table per observation class
    - Findings
    - Events
    - Interventions
- Fewer variables
  - No special findings (demographics)
  - No special qualifiers (AE severity)
  - One mechanism to link observations

Status

- Logical design evolving with SDTM
- Physical design through CRADA with IBM
- High priority with IMSC
- Prototype populated in 2005
- Alternatives for implementation in 2006
  - Partner with NCI
  - Contract
  - Consortium