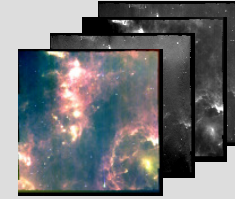


7. Concepts and Models of the Visualization Process

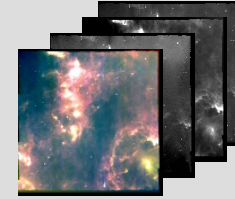
- 7.1 Process models
- 7.2 Reference model
- 7.3 Enabling technologies





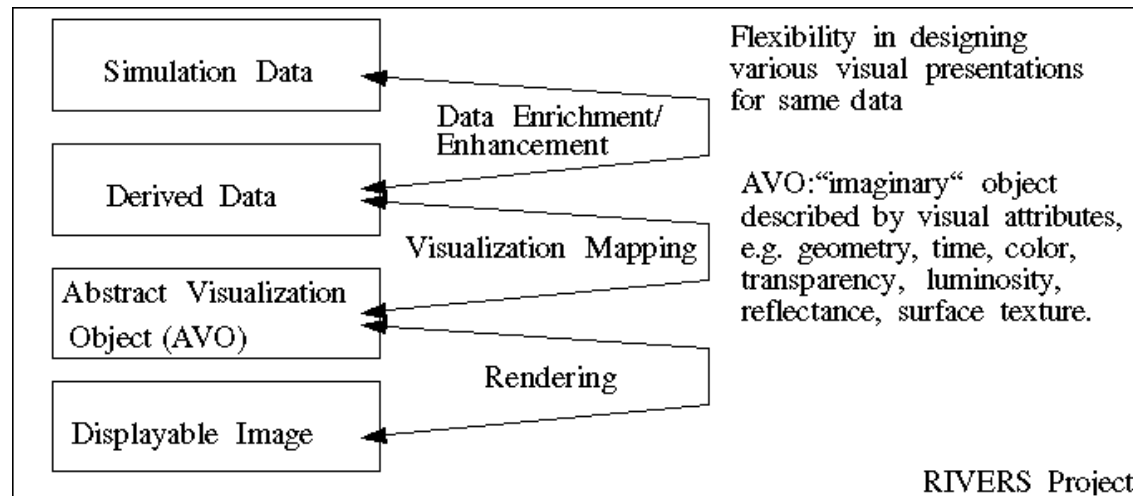
7.1 Process Models (a)

- **AVS pipeline**
 - pump data through pipeline into rendered picture
- Visualization idioms
 - flexibility in viewing data with various representation techniques
- Interactive pipeline models: more complex process models

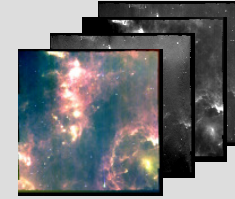


7.1 Process Models (b)

- **Haber and McNabb (Visualization Idioms)**
- Visualization process is series of transformations to convert raw simulated data into a displayable image:



Visualization idiom: “a specific sequence of data enrichment and enhancement transformations, visualization mappings and rendering transformations that produce an abstract display of a scientific data set”. [HAB90]

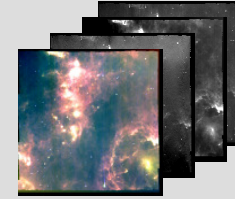


7.2 Reference Model

- Compare various approaches of process models

[ROB94]





7.3 Enabling technologies

- Software and Hardware
 - e.g. batch vs. interactive, distributed environments, oo paradigms
- User Interface
 - e.g. data flow diagramming, truly interactive systems
- Mapping strategies
 - e.g. through intelligent agents, knowledge bases