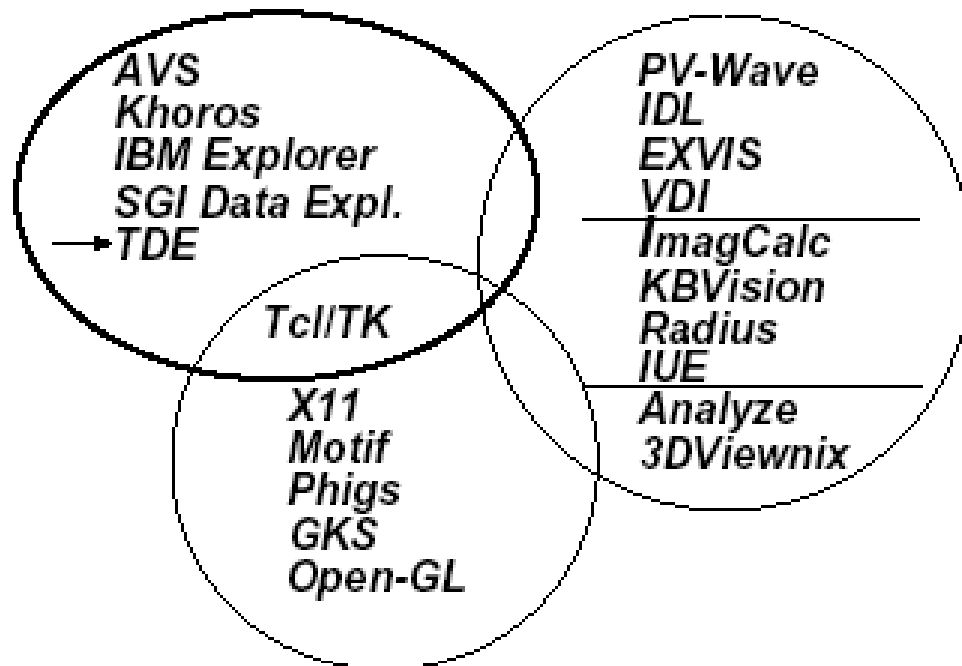

***An Environment for
Telecollaborative Data
Exploration***

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1. Different Approaches to Visualization



- Customizability vs. Domain-Specificity
- Performance / Control flow
- Data Representations (dynamic/static)
- Data Presentations
- Explorative Capabilities
- [Collaboration]

2. Data Presentation vs. Data Representation

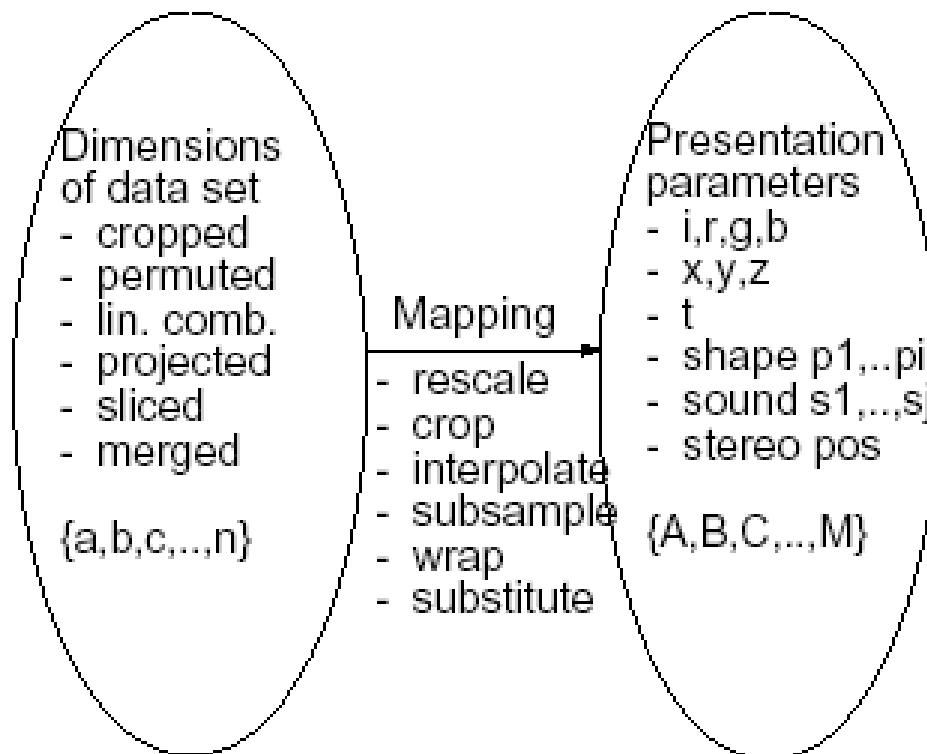
Observation: There are many ways (dimensions) for visualizing a data set.

- Intensity- and color- images
- Graphs and surface plots
- Icons
- Printed numbers
- Movie loops
- Sounds
- Various styles, overlaid or interleaved.

All dimensions are created equal.

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Data mapping:



E.g: Intensity image

- As terrainmap: $\{x,y,i\} \rightarrow \{x,y,z\}$
- As movieloop (x- vector): $\{x,y,i\} \rightarrow \{x,t,i\}$
- As movieloop (graph): $\{x,y,i\} \rightarrow \{x,t,z\}$

3. Data Exploration

Observation: Users don't just look at their data. They want to

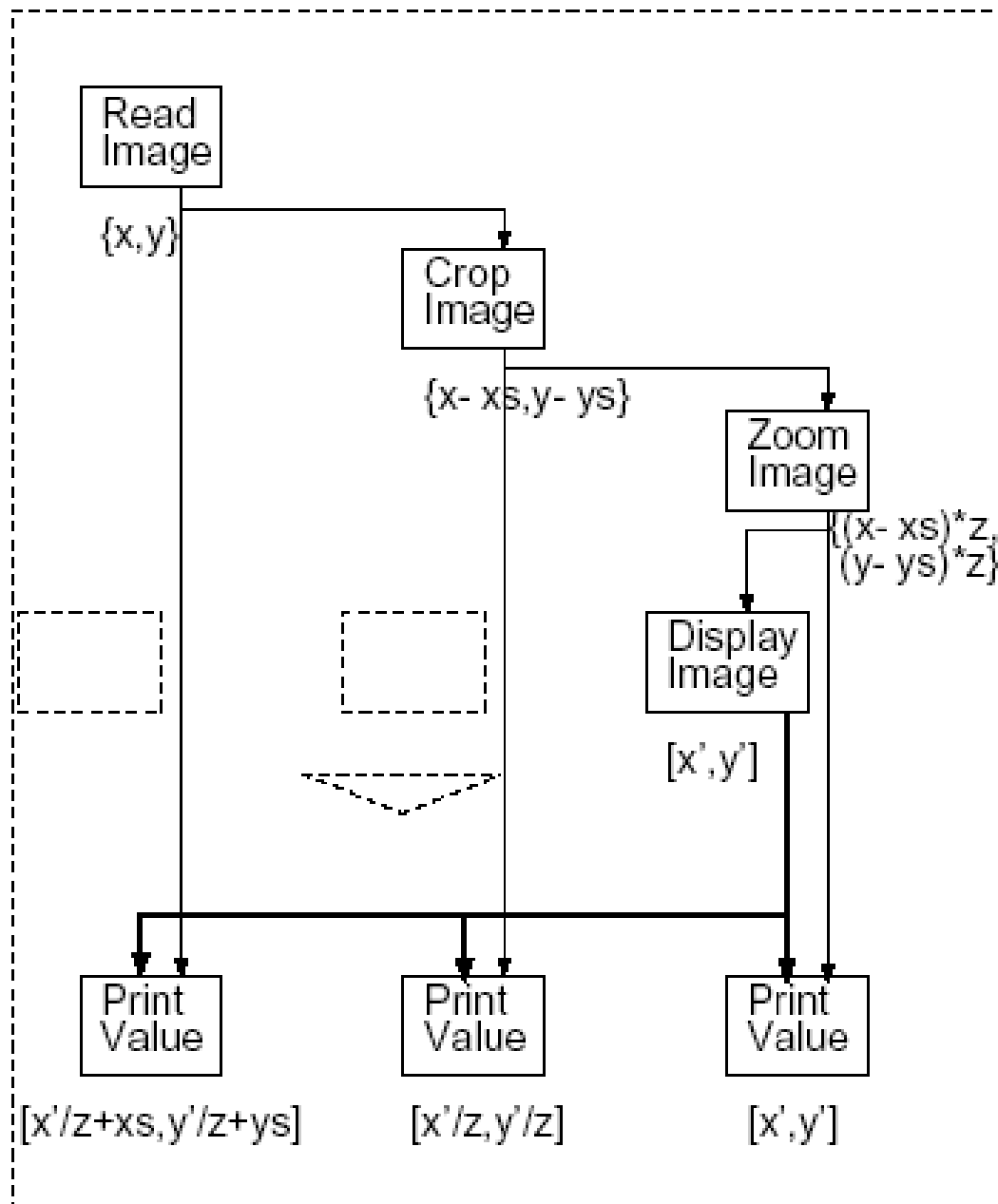
- Explore (probe) the data.
- Analyze some parts of it (ROI).
- Relate it to other measurements.

The feedback channel:

- Makes the current mouse position available to a visual program.
- Provides tools to maintain the transformations between the mouse in the window and the corresponding array index.

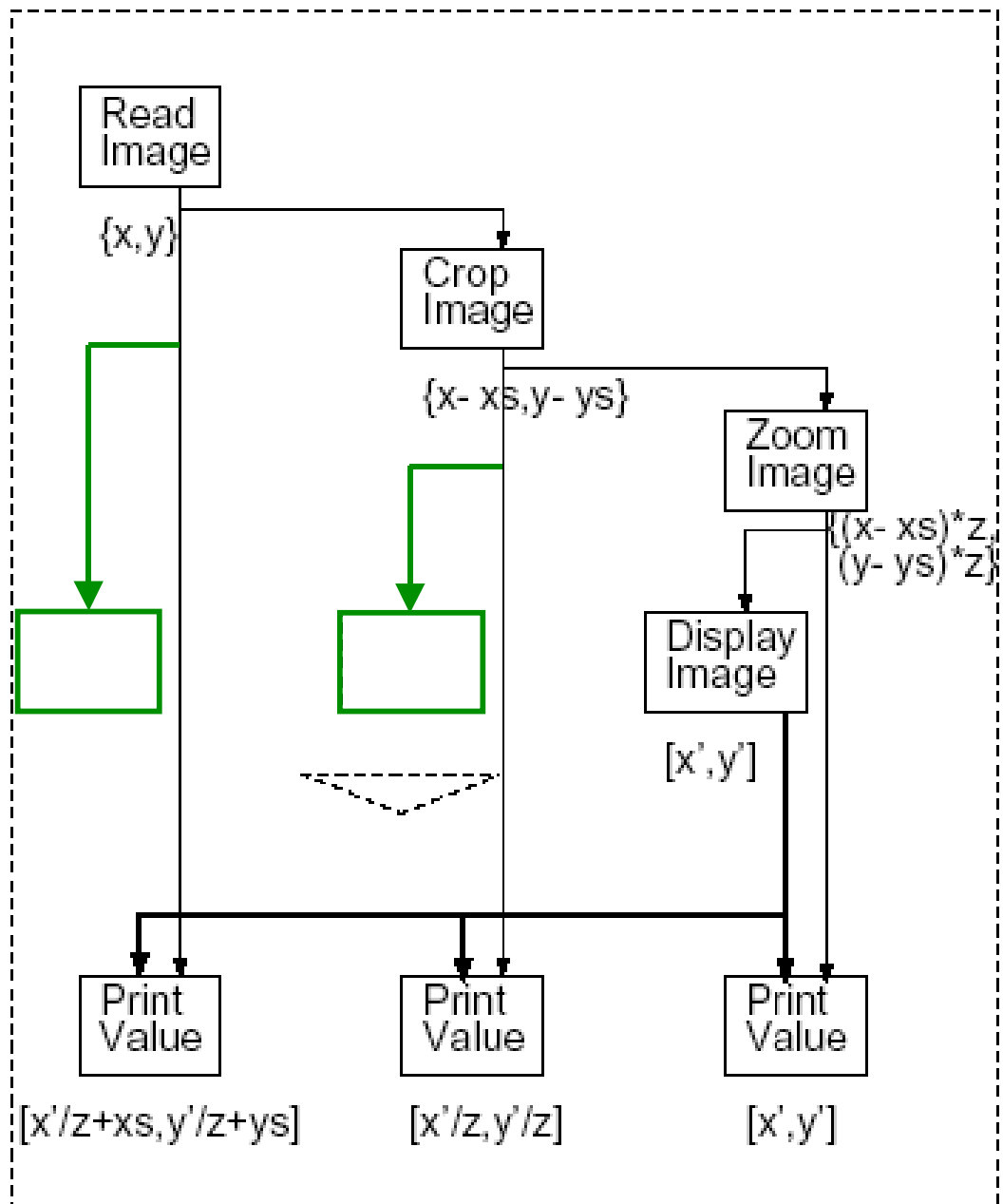
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Feedback channel:



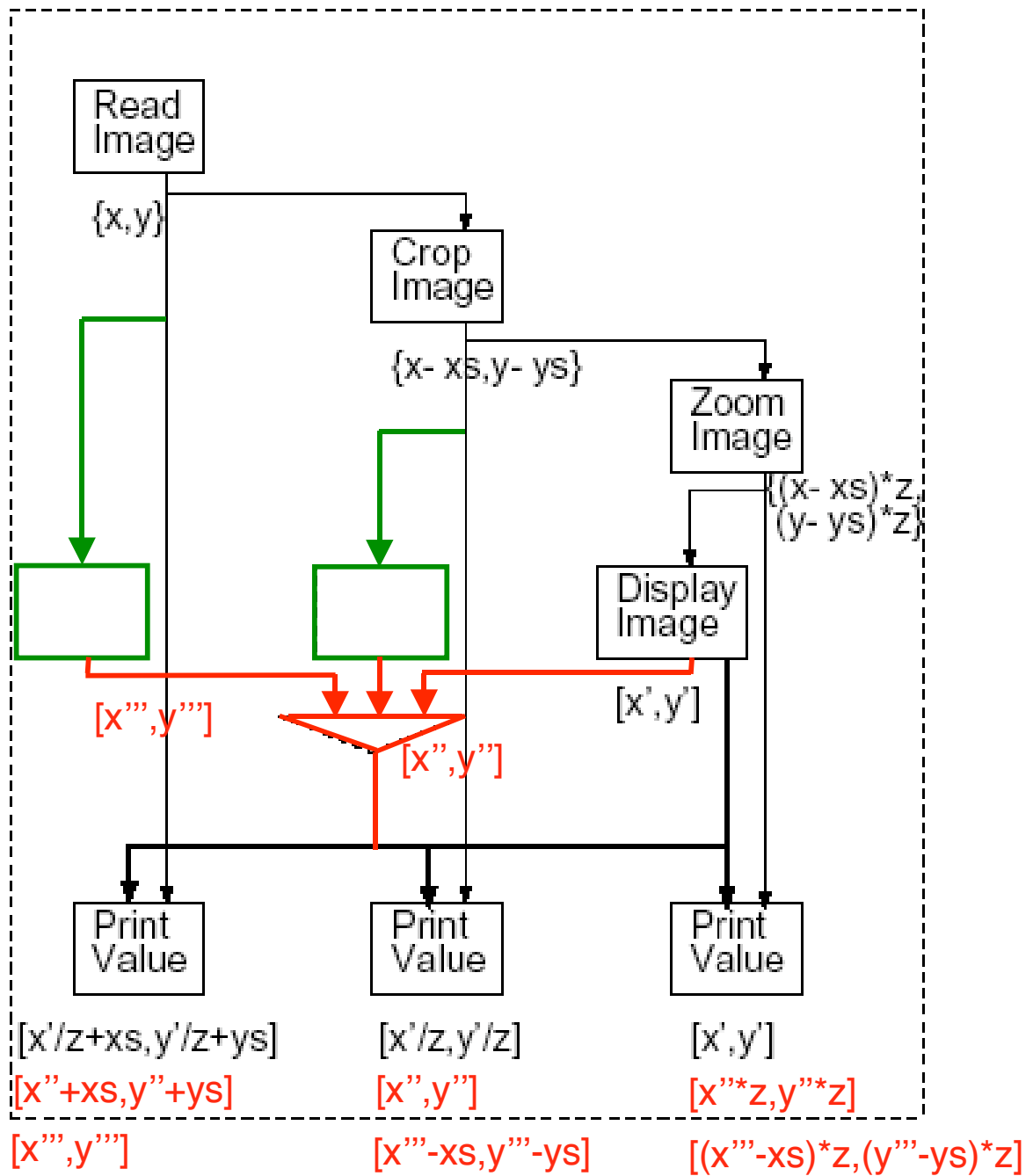
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Feedback channel:



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Feedback channel:



4. Telecollaboration

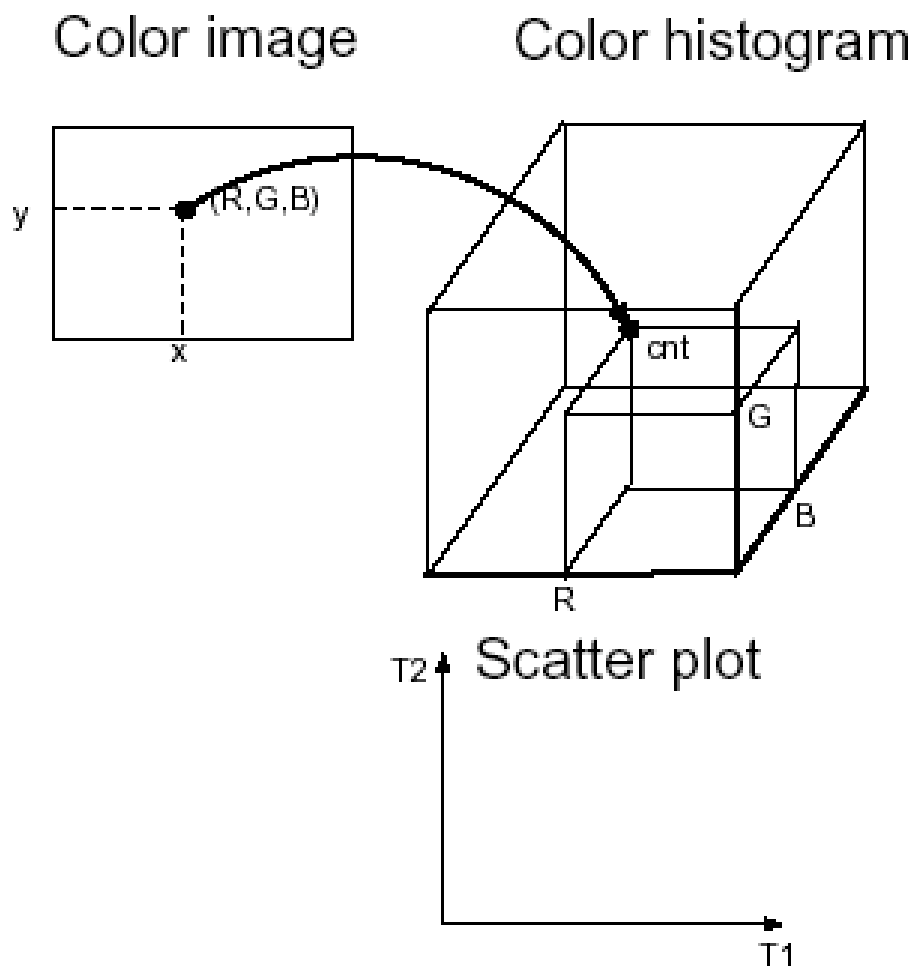
Observations:

- Every once in a while, users want to discuss the current state of their data analysis with a colleague (who may not be at the same place).
- The collaboration partners on both ends need to be able to
 - Fully participate in the analysis session.
 - Individually customize their views when desired.
 - Communicate with each other on a meaningful level of abstraction.

- Several individualizable data mapping and presentation paths.
- Linked cursors.
- Window migration.

Example

Tele- collaborative analysis of multi-spectral data.



Tele-collaborative multi-spectral data analysis in TDE (AVS)

