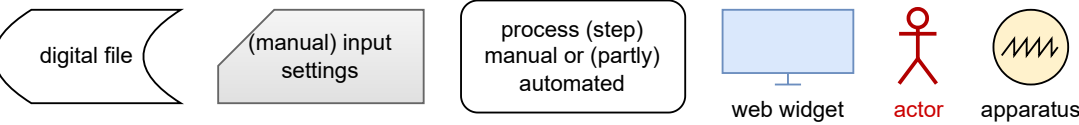


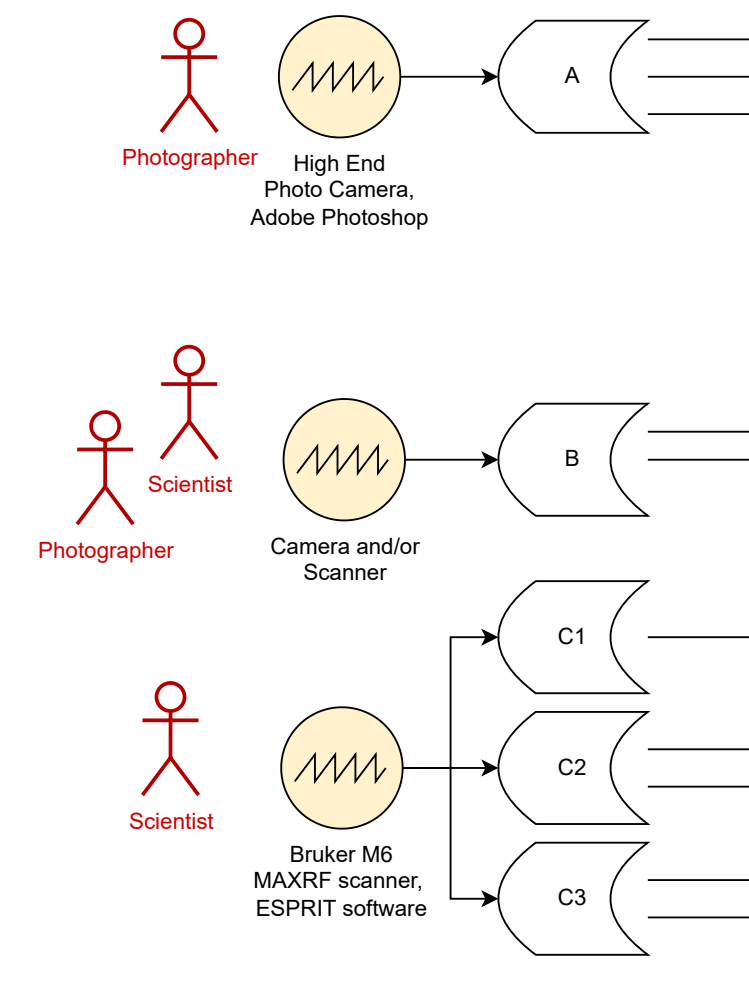
Process: Data flow for XRFEXPLORER

Version: V0.1 (20241022 by MarcoR)

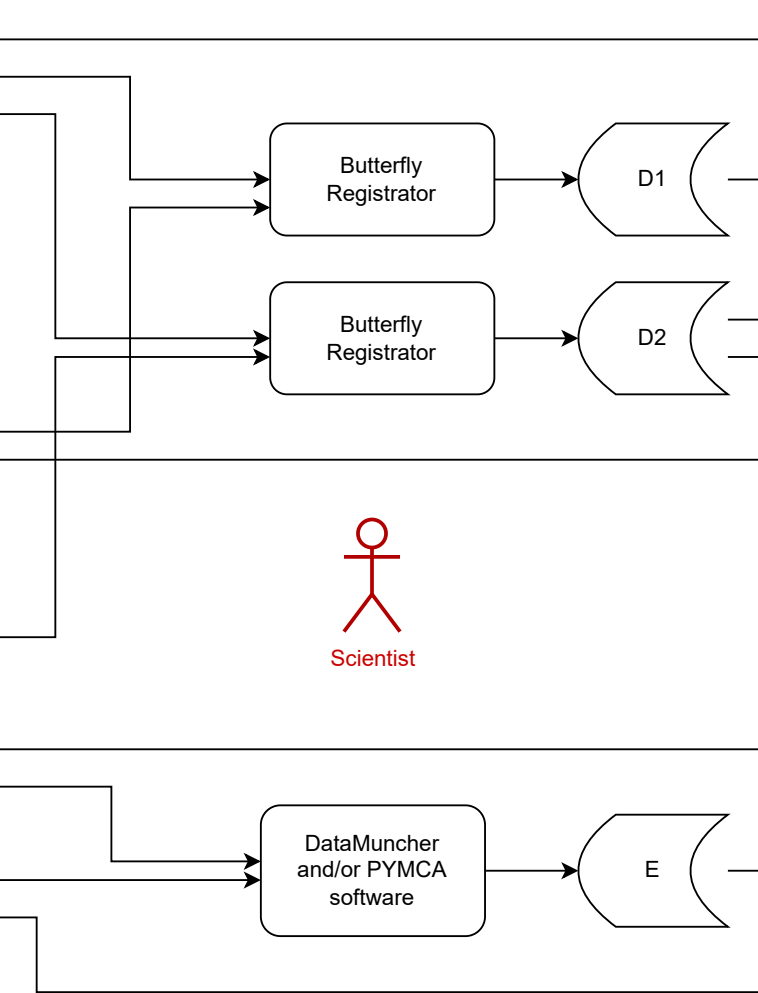
LEGEND



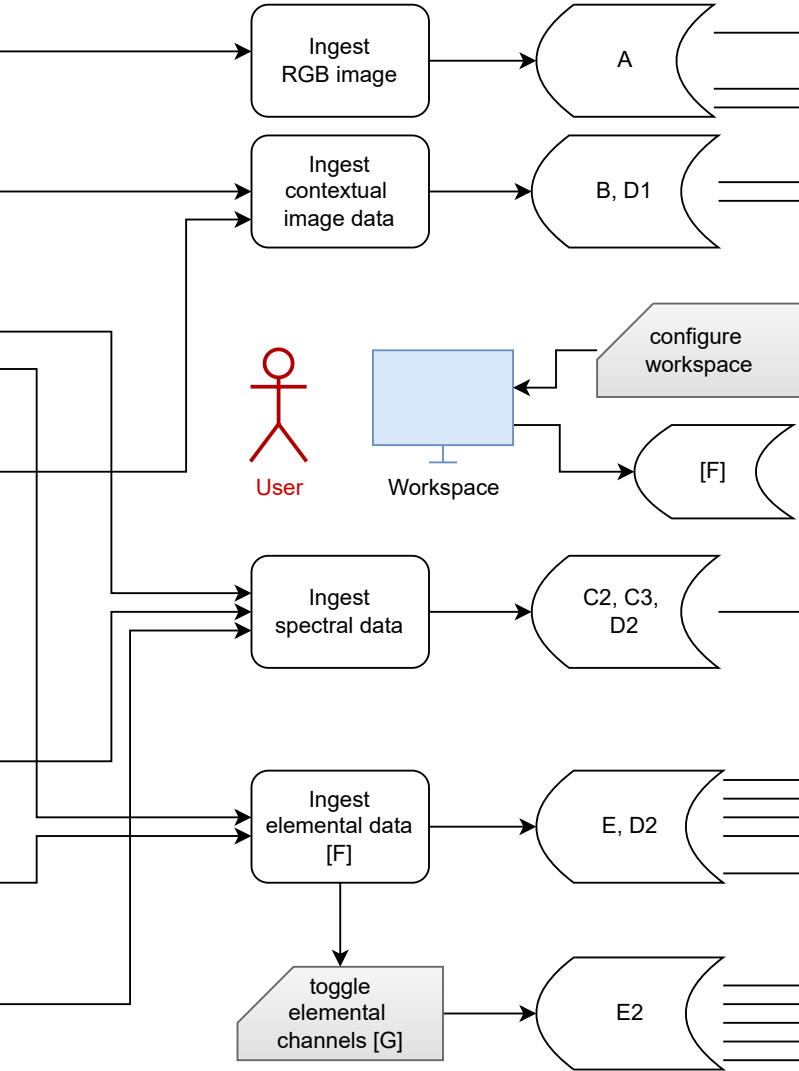
Acquisition



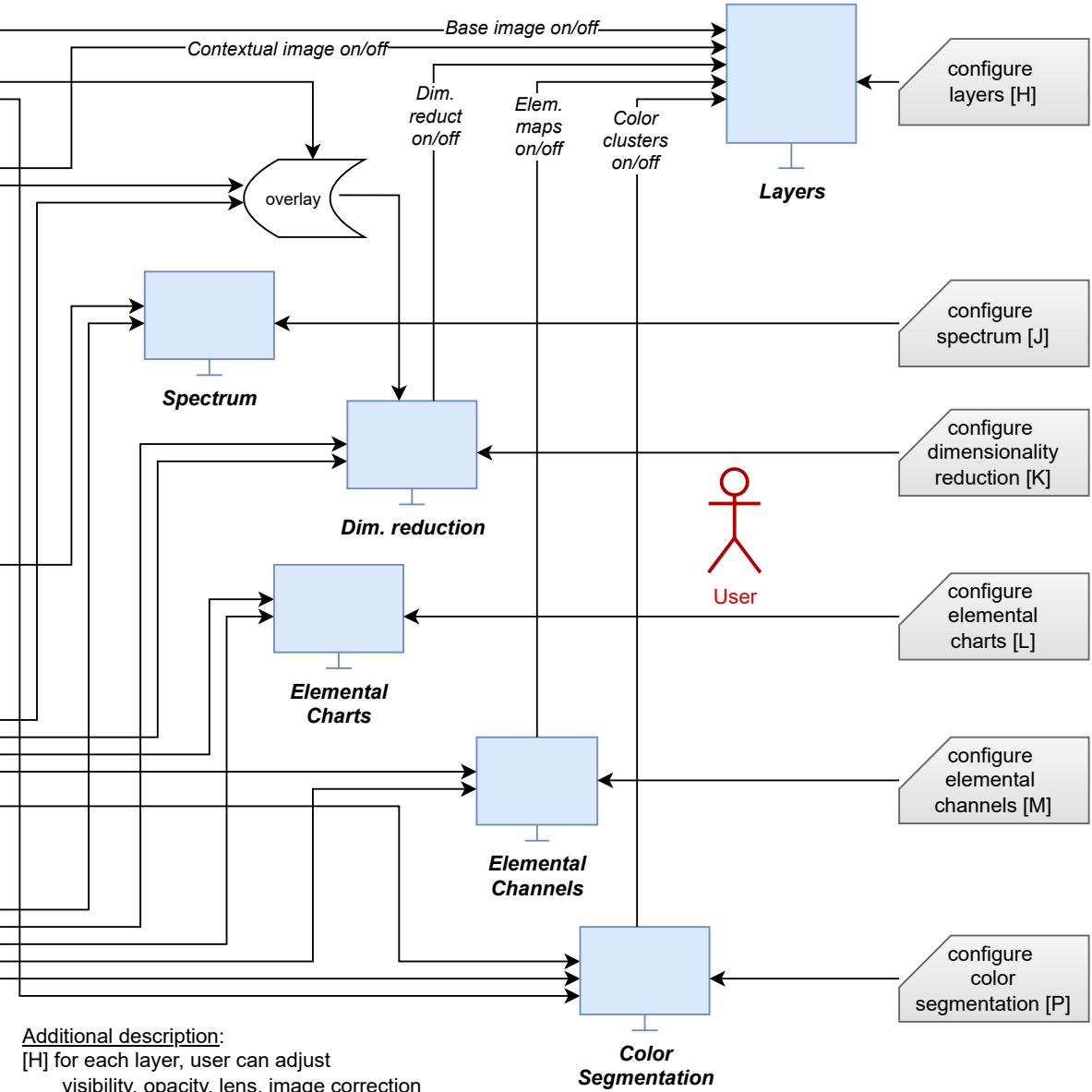
Processing



XRFEXPLORER
Setup Workspace Data



XRFEXPLORER
Visualize Data in Web Widgets



Additional description:
[A] high resolution RGB image of the painting (part, or full) (.TIF)
[B] RGB image of the painting (part, or full) that represents a modality, for example: Xray, UV, IR, Element map (.TIF, .JPG, .PNG)
[C1] image file, showing the scanned area (.TIF), scanned area can be a part of a painting, or the full painting
[C2] spectral data cube (.RAW), binary data, containing data points (X;Y;Channels[1..n];Count)
[C3] instrument metadata (.RPL), human/machine readable, containing scanning dimensions (x,y,channels), data type, depth scale
NOTE: for now, it is assumed that one scanned area covers an enclosed 2D plane, and stitching of scan fragments is done by the scanner software.

Additional description:
[D1] registration recipe file (.CSV) that maps B to A
[D2] registration recipe file (.CSV) that maps C1 to A
[E] elemental data cube (.DMS), containing data points (X;Y;Z=ChemElements[1..n];Count)

Additional description:
[F] ingest leads to the automatic generation of a list of available elemental channels
[G] user can toggle on/off chemical elements that will be shown in the elemental channels widget
[E2] a list of elemental channels, chosen by the user, for use in visualization widgets
[F] configuration of the workspace leads to the automatic creation of a .JSON config file

Additional description:
[H] for each layer, user can adjust visibility, opacity, lens, image correction
[J] user can choose global average, selection average, element theoretical, excitation level and generate a spectra chart (temp files created)
[K] user can choose an element, threshold, and then let the system generate an embedding, after that, the user can choose one overlay (A, B, or elemental channel images generated from E) and the system generates a Umap (temp files created)
[L] user can choose bar chart, line chart, display elements, and an element chart is automatically generated
[M] user can adjust visibility, color, threshold for each elemental channel
[P] user can choose element, threshold and number of clusters and generate an interactive color cluster map (temp files created)