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Remote Monitoring and Access to Instruments and Data. The CIMA Crystallography Portal. John C. Huffman*[a], Donald F. McMullen[b], Kianosh L. Huffman[b], [a]Indiana Univ. Molecular Structure Center, [b]Pervasive Technology Laboratories, Indiana Univ., Bloomington, IN 47405.

The Common Instrument Middleware Architecture (CIMA) project, supported by the National Science Foundation Middleware Initiative, is aimed at "Grid enabling" instruments as real-time data sources to improve accessibility of instruments and to facilitate their integration into the Grid. CIMA middleware is based on current Grid implementation standards and accessible through platform independent standards such as the Open Grid Services Architecture (OGSA) and the Common Component Architecture (CCA). The CIMA Crystallography Portal is designed to allow remote monitoring of instruments and provide an environment that will allow authenticated collaborators to access and process data as it is collected using simple web services. The system has been designed so that long-term data integrity is assured using distributed university maintained resources. The data captured during the experiment will include the raw data frames and the raw data converted to the imgCIF format. It will also include extensive metadata that allow the user to easily review an experiment at a later date. The CIMA Crystallography Portal is currently in operation or being implemented for instruments in the IUMSC, the ChemMatCARS beamline at ANL, and three other university sites.