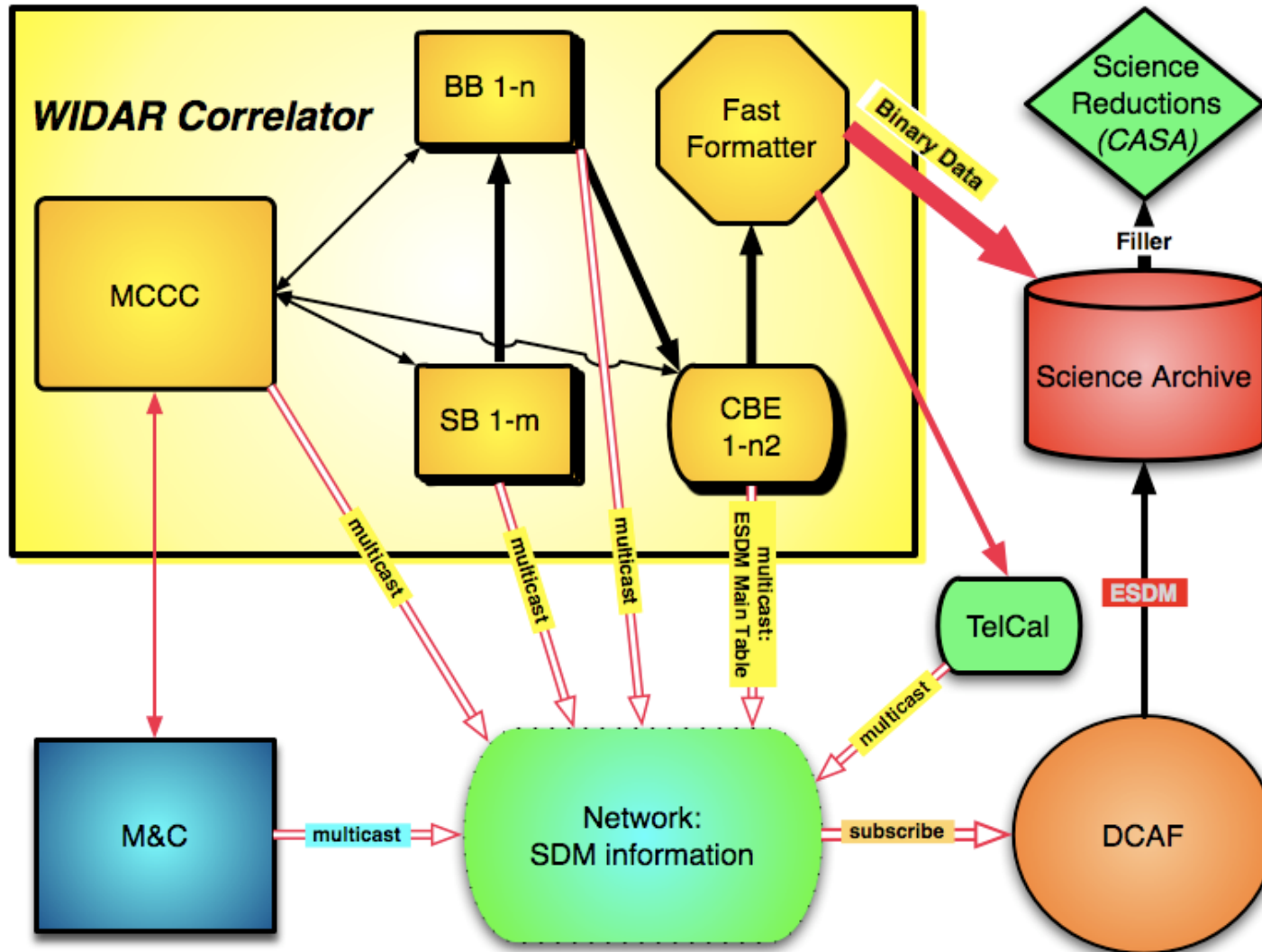


Science Data Model

Michael P. Rupen & Rich Moeser

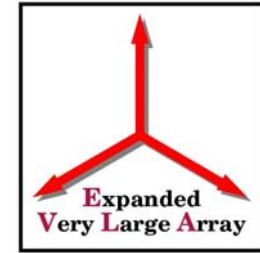
WIDAR & the SDM



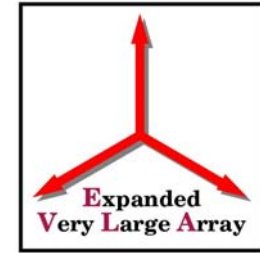
- SDM is the set of tables of metadata required to make the binary data astronomically useful
- SDM is written by MCAF, based on multi-cast data



Data needed for micro-SDM for PTC OTS tests



- Shape of data cells (number of antennas, BB, SB, pol'n, channels, etc.)
- Antenna info (name, XYZ)
- Pol'n/feed basics (name, CP)
- Channel-to-frequency conversion (spectral windows etc.)
- Scan, subscan (times & fields)
- On-line & corr. flags (?)
- Lots of “stubs” (corr. config.; beam/pol'n response; intents/modes, ...)

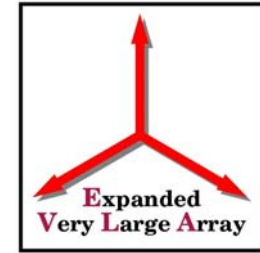


Working with the SDM

Rich Moeser



SDM (working with)

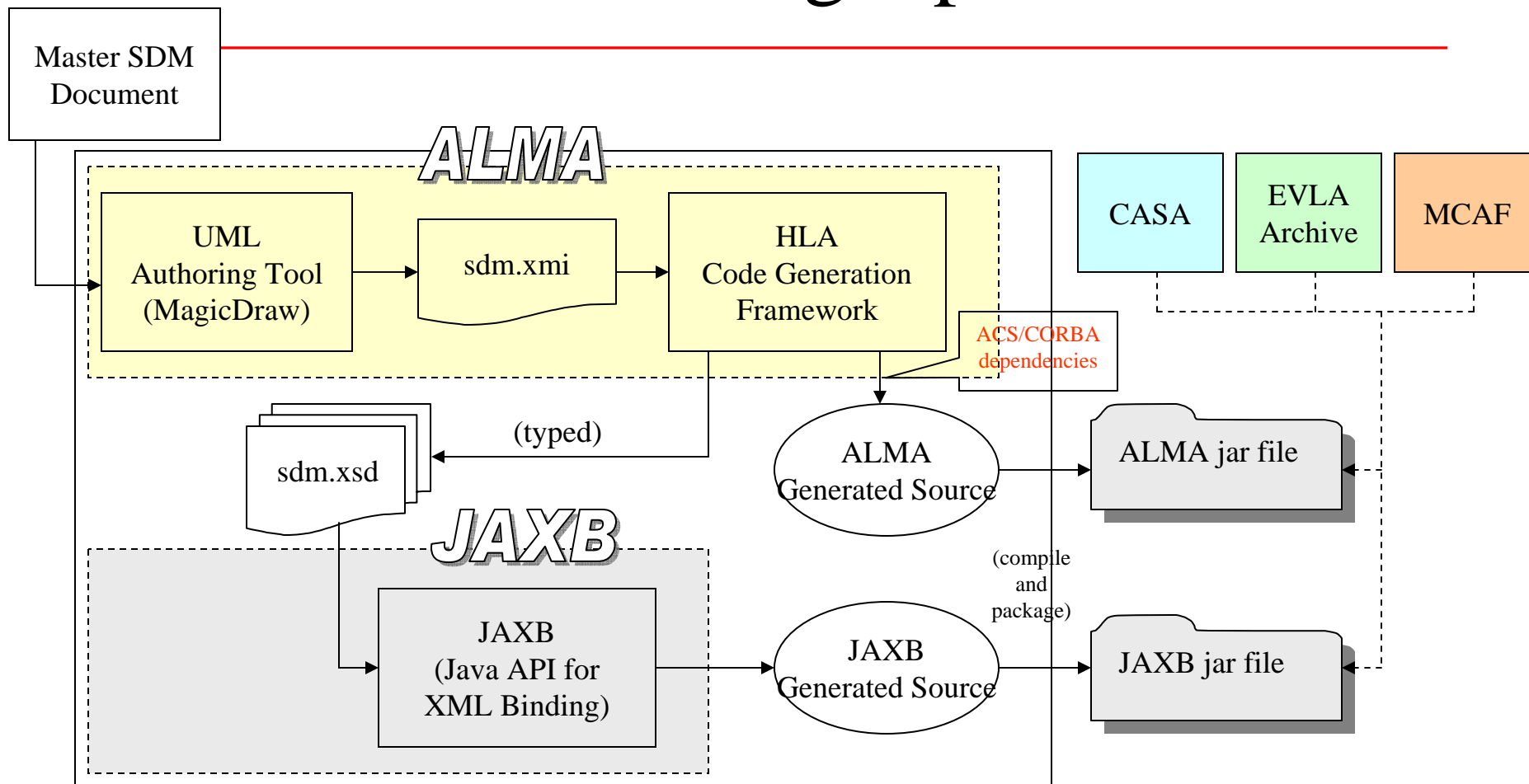
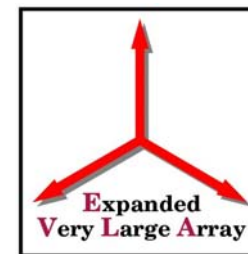


- We need a way to read and write the SDM
 - Apps that create and write SDM tables
 - MCAF
 - CASA (simulator)
 - Others?
 - Apps that need to read SDM
 - EVLA Archive
 - CASA
 - TelCal
 - Quicklook?
 - Others?
- It would be nice if these applications could share common code to work with the SDM.
- Options for working with SDM
 - ALMA's SDM classes
 - Classes generated by JAXB



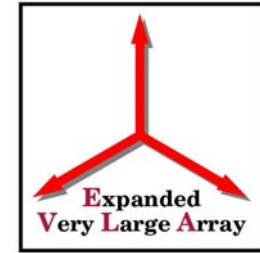
SDM

Java Binding Options





ALMA's Approach Benefits/Concerns

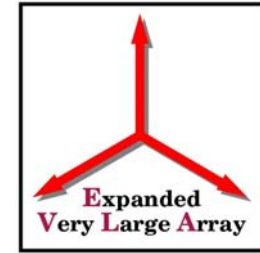


- Benefits of using ALMA's code
 - Code sharing between ALMA and EVLA
 - Time saving
 - Common code can be used by several apps (MCAF, EVLA Archive, CASA, TelCal, etc.)
 - A number of convenience methods have been added to the generated code.
 - ALMA will handle compilation and packaging of Java classes.
- Concerns
 - The current version has ACS and CORBA dependencies. (A new version will be released in February that does not have these dependencies.)
 - What is the process for requesting bug-fixes and new changes?
 - What would the turn-around time be for such requests?
 - Not sure if the generated code includes schema validation(?)
 - The generated code does not use a standard XML parser.



JAXB Approach

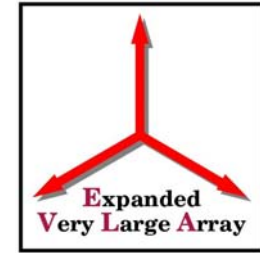
Benefits/Concerns



- Benefits of using JAXB code
 - Java source code is automatically generated
 - Built-in schema validation
 - Generated code can be used by multiple apps, MCAF, EVLA Archive, CASA
 - Uses a standard XML parser
- Concerns
 - No code sharing with ALMA
 - CASA filler may diverge
 - Convenience methods will have to be written
 - JAXB will need to be integrated into the build process and the jar file will need to be created.



The Plan...



-
- Time allowing...prototypes using both approaches will be developed.
 - As long as it's ready, plan on using ALMA's code for the first cut of MCAF.