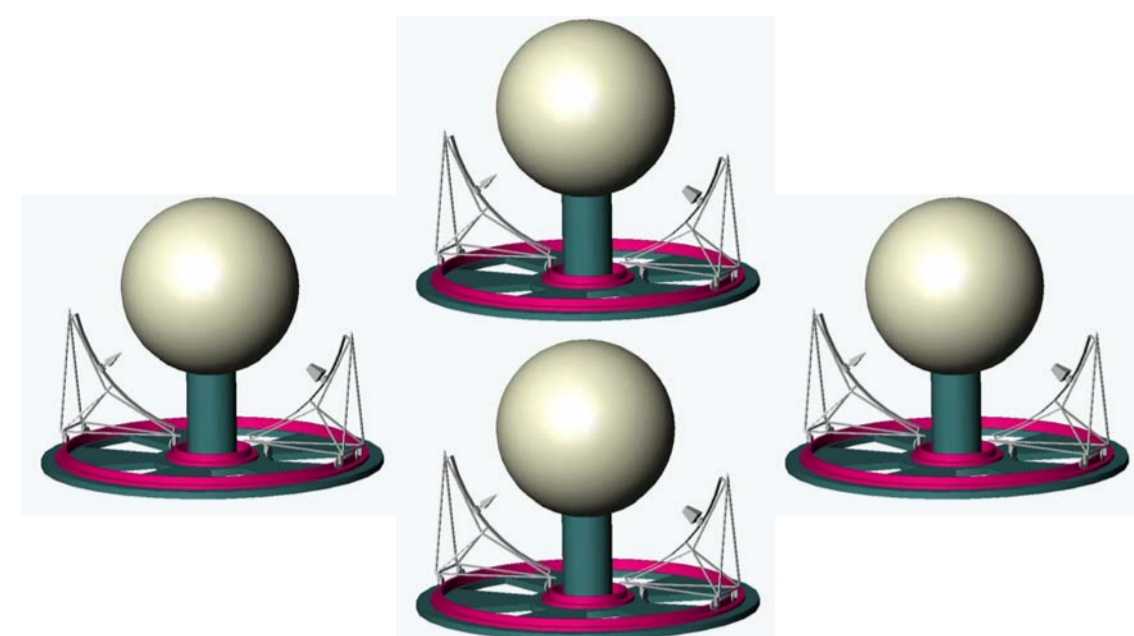


A Wideband Upgrade for the Australia Telescope Compact Array

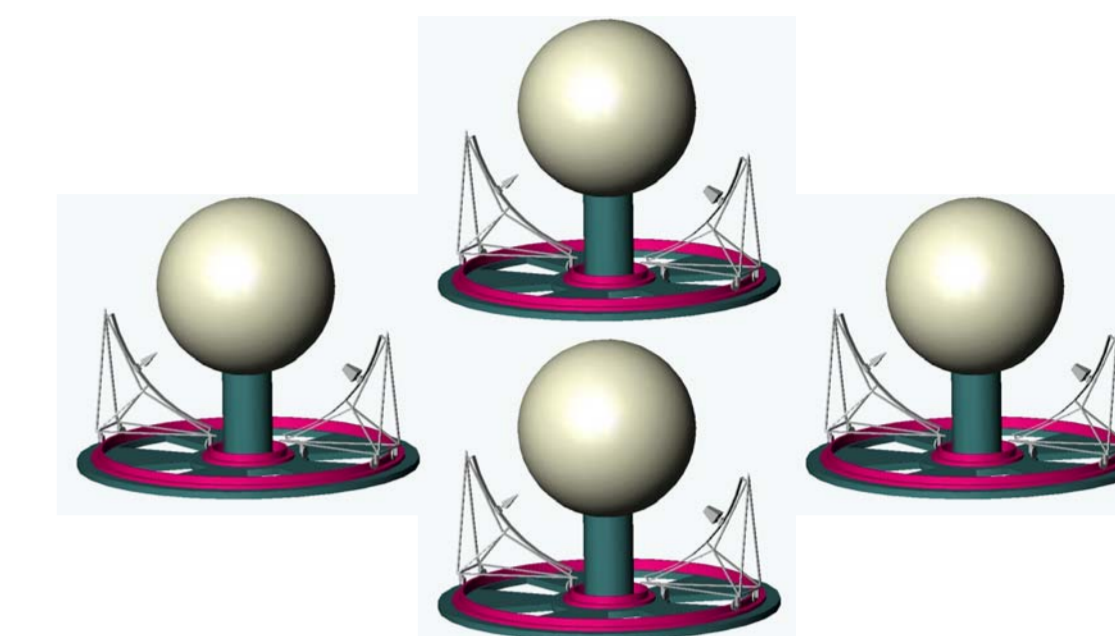
Dick Ferris & Warwick Wilson



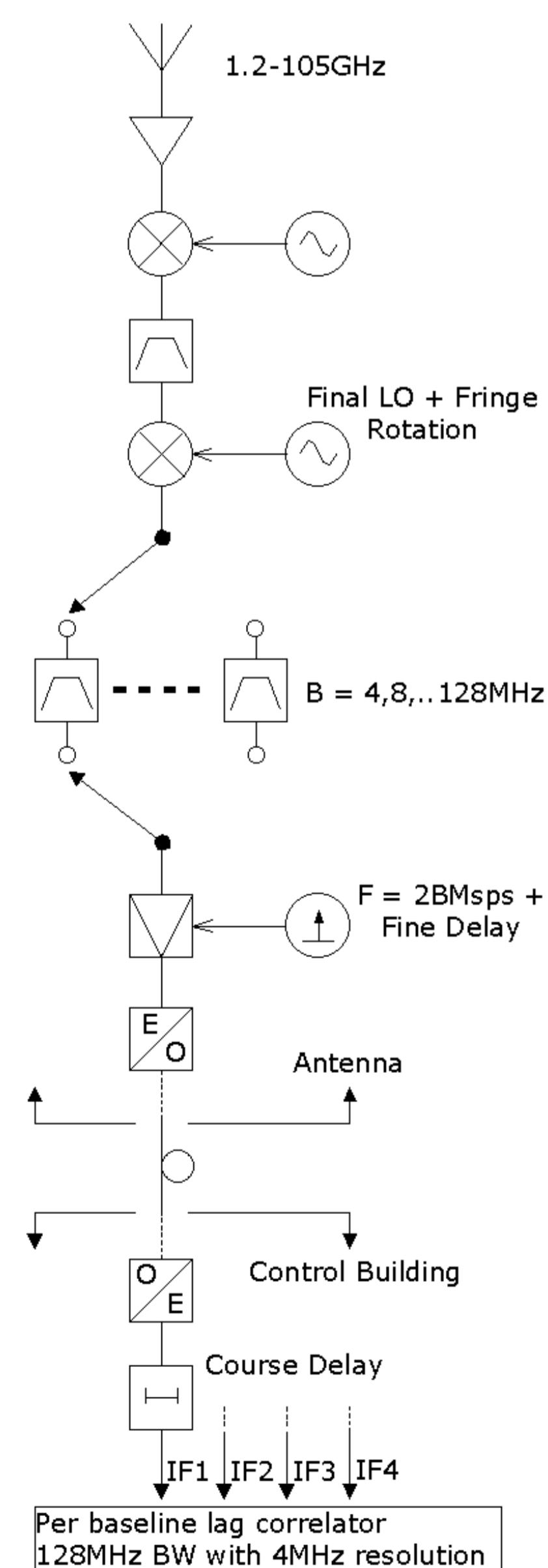
Luneburg Lens Phased Array



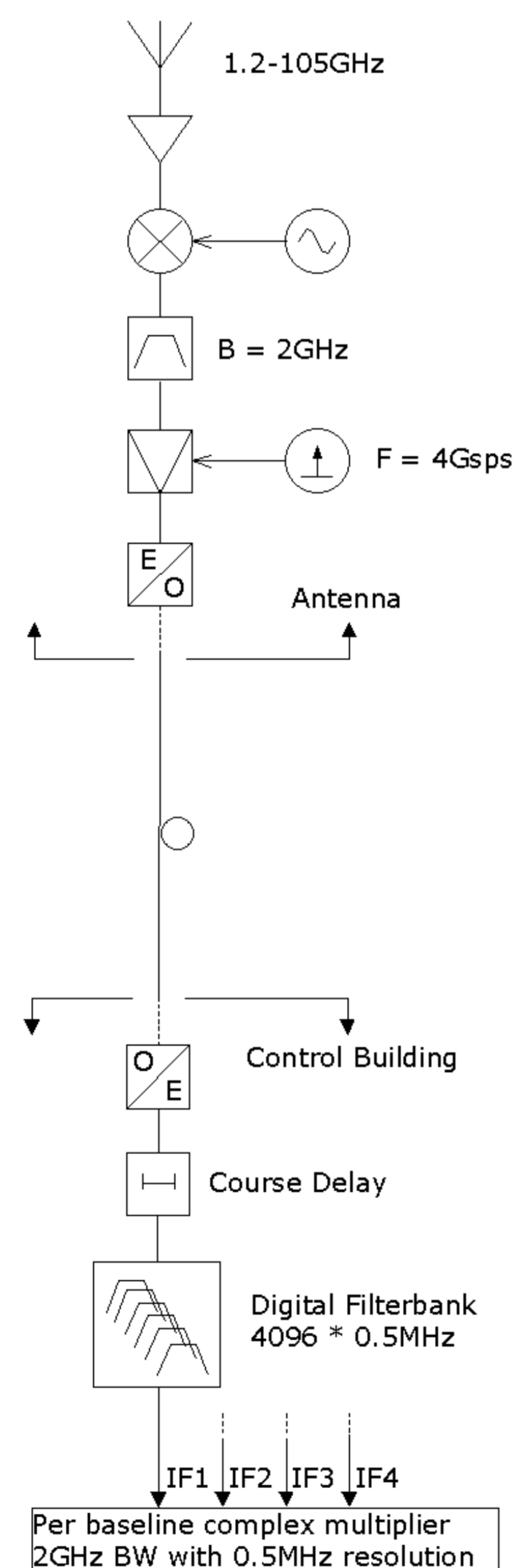
6 * 22m antenna AT Compact Array



Luneburg Lens Phased Array

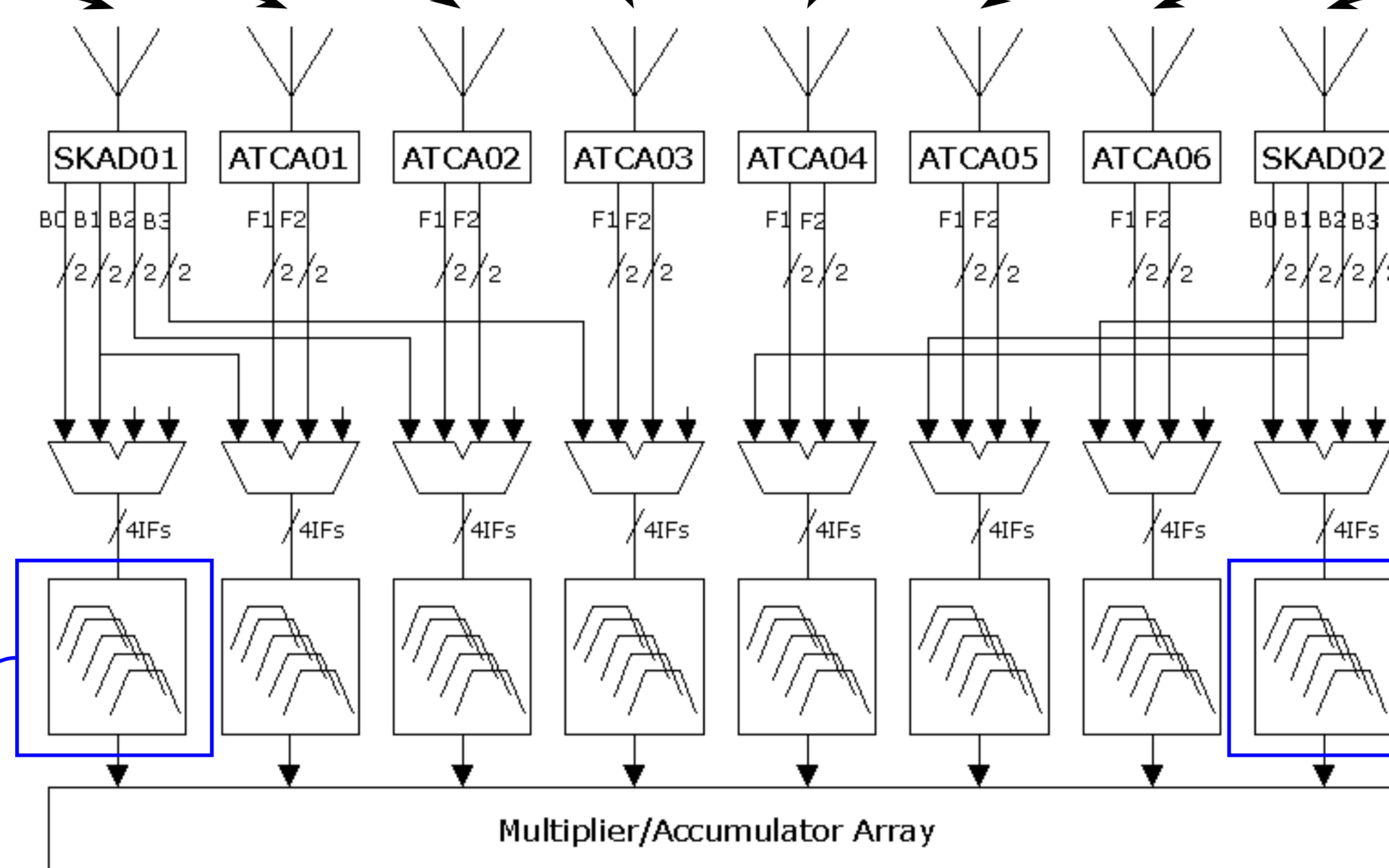


Current System

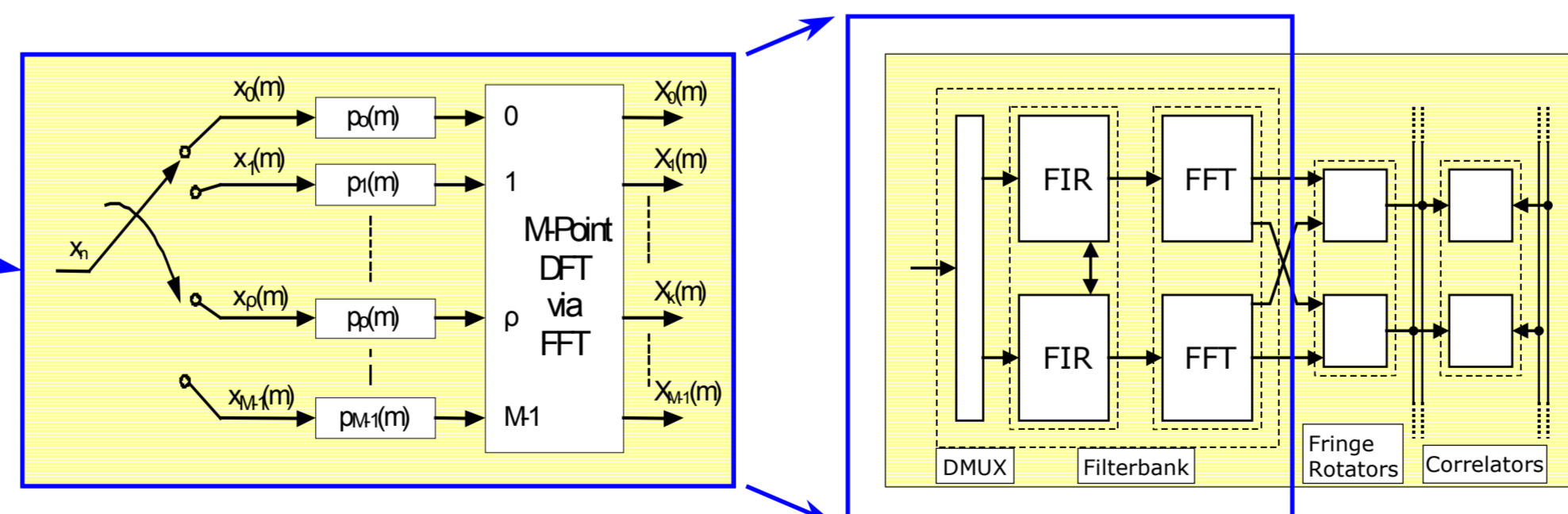


New System

RF, IF and Baseband Signal Path



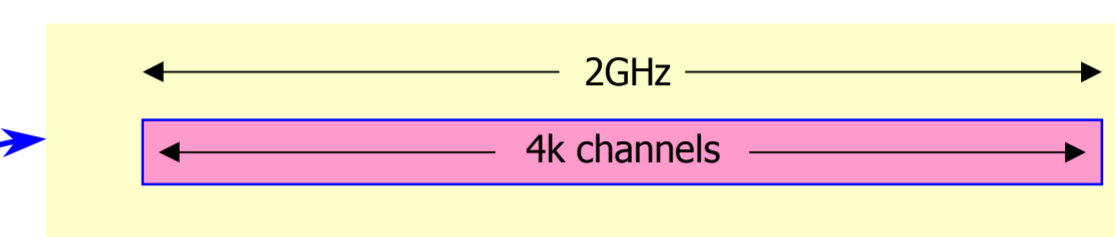
Extended Interferometer Structure



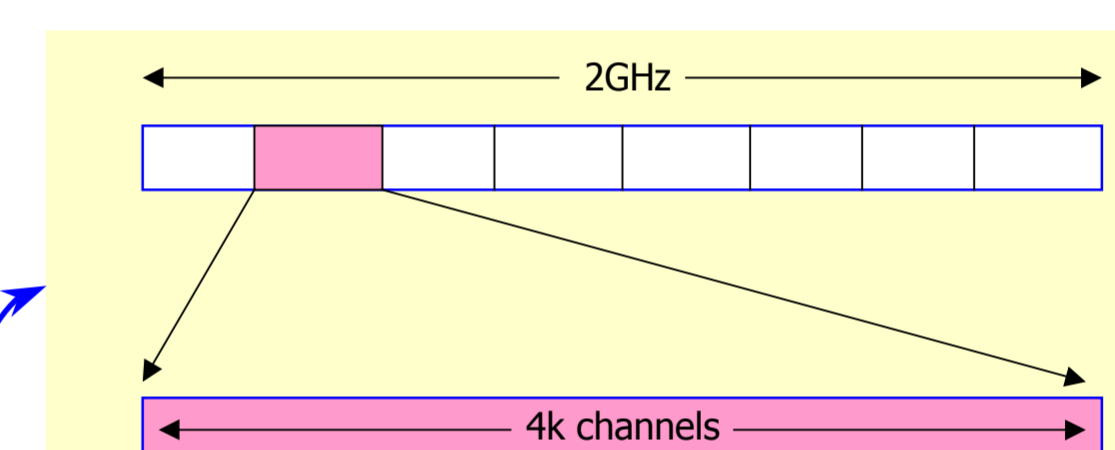
A 2GHz bandwidth polyphase digital filterbank with 4096 channels ...
... will fit into four XC2V6000 FPGAs

Filterbank Architecture

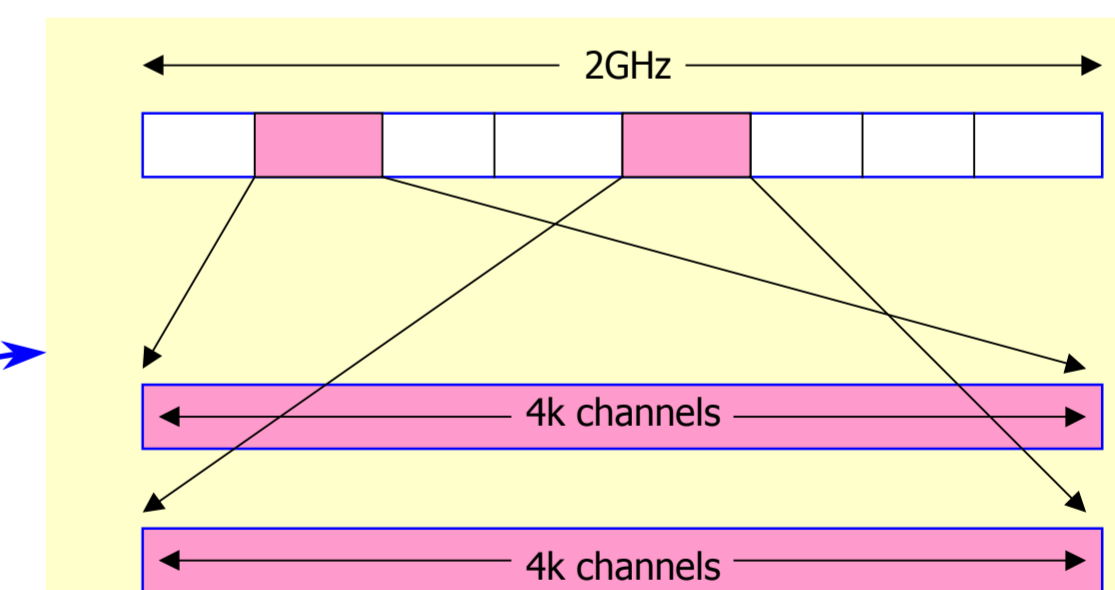
FPGA hardware may be completely reprogrammed to produce many different filterbank configurations, as different observations may require.



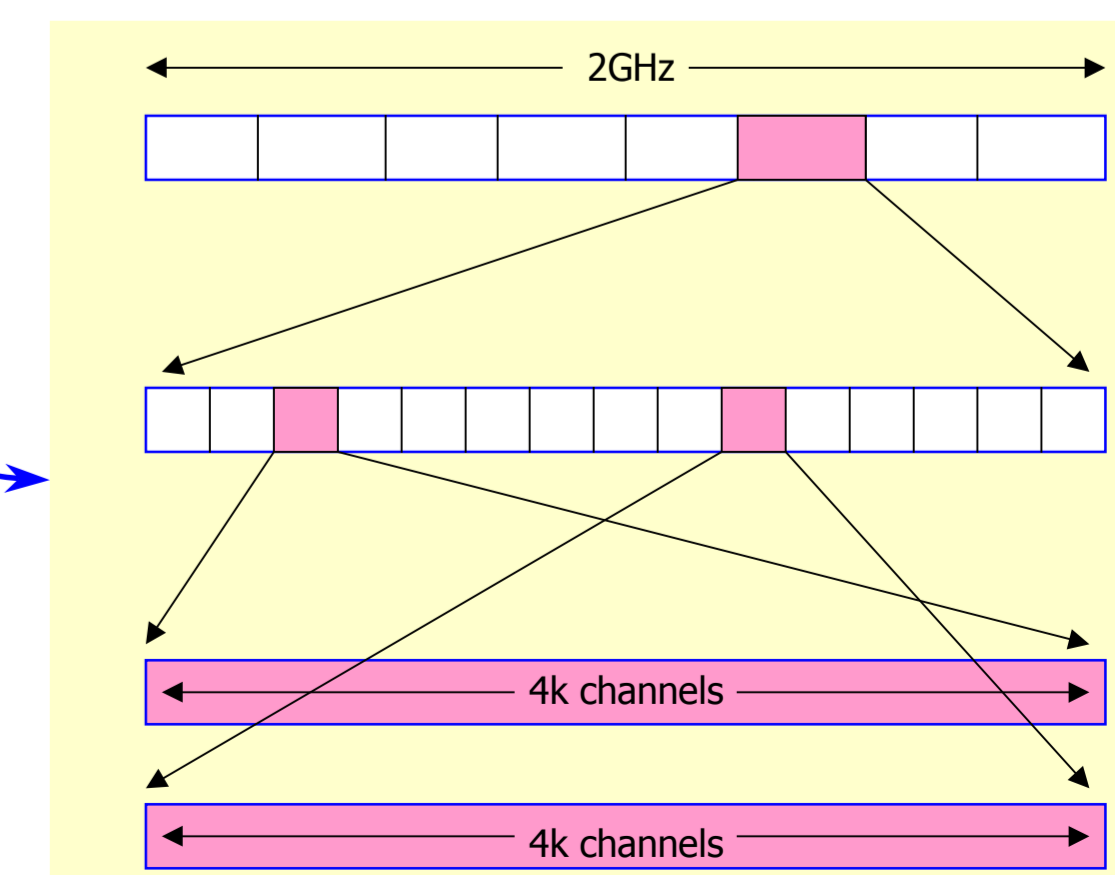
Basic Configuration



Simple Zoom



Multiple Zoom (>2 possible)



Compound Zoom