

## Proposed Functionality of Phased Arrays

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Current descriptions of phased array systems tend to omit subcomponent details, including their limitations, rather than function and design requirements. Functional descriptions of architecture designs make it easier to break up design problems into bite size pieces that can be handled separately by geographers, system designers, and hardware developers. This is done because changing to a different subcomponent may also change the nature of the limitations.

For example, functionally, an Acousto Optic modulator, a Mael Zehnder modulator and a diode laser can each be used to modulate a RF signal at an optical carrier, yet each has its own set of limitations. They differ by size, speed, bandwidth, and power handling requirements. In some application scenarios, these subcomponents can be freely exchanged. In others, requirements may force one towards the use of a specific component. Although the subcomponent details are important in the final stages of design, it is more important for the systems overview, to examine the architecture in functional terms.

This paper proposes a set of symbols for laying out phased array architectures. The proposed descriptors provide information on the size of the array, the sequence and methods of scanning out the array, and the placement of the photo electronic interface within the overall architecture.

Examples will be drawn from Frank Wentz's review paper "A Survey of Optical Beam Steering Techniques."