

DIRECTIONAL FINDING FOR SOURCES WITH UNKNOWN BW & CENTER FREQ

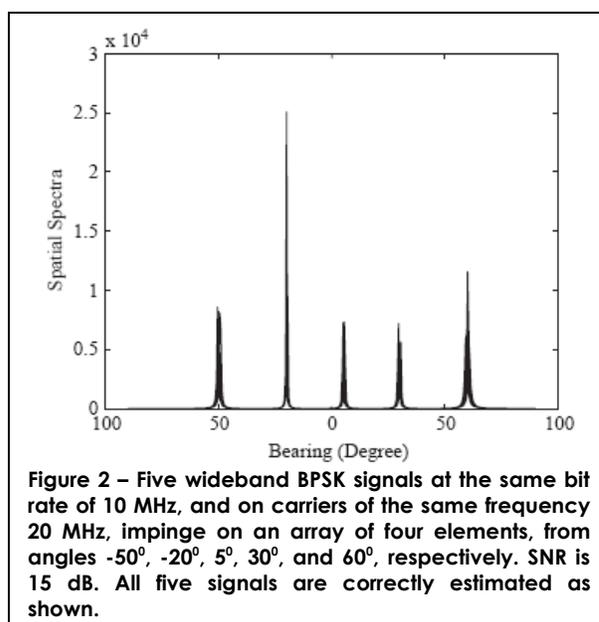
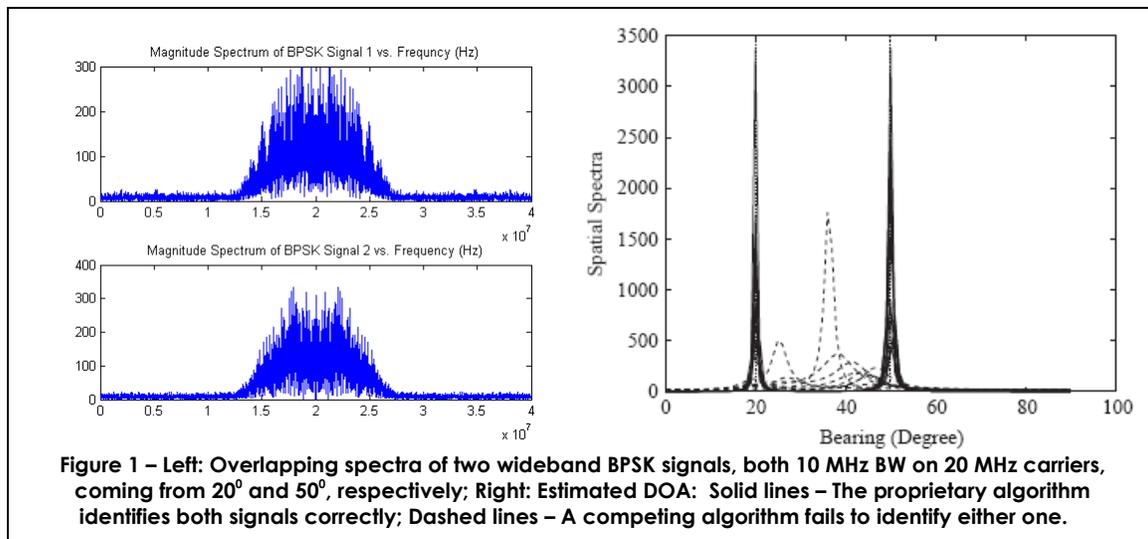
Technology in Development:

- AFRL Phase I SBIR awarded June 2007

General Description:

GIRD Systems, in collaboration with L-3 Communications Nova Engineering, is developing a novel direction finding technology for direction finding with sources of unknown bandwidths and unknown center frequencies.

The target processing bandwidth that the technology will cover is 400 MHz, which will scan in the frequency range of 500 MHz to 2 GHz. The target sources may fall anywhere within this wide frequency range, and with unknown bandwidths of up to 400 MHz. The challenge is to accurately find directions of such sources.



GIRD Systems has developed a proprietary direction finding algorithm to perform this difficult task. Figure 1 illustrates computer simulations of two wideband sources in the same frequency range but coming from two different directions, and being identified properly by the algorithm. Figure 2 further illustrates that five wideband sources can be properly identified by GIRD Systems' proprietary algorithm with an array of four antennas.

Hardware Implementation:

The challenging task of performing digital processing for a 400 MHz bandwidth with a frequency range of 500 – 2000 MHz is accomplished by the GIRD/Nova team's extensive experience in every aspect of R&D in hardware prototyping, ranging from RF to DSP.