IMPROVING SITUATIONAL AWARENESS AND QUALITY OF SERVICE USING 3-DIMENSIONAL AUDIO WARNING SYSTEM (3-DAWS)

Group Captain G. Ananth
Indian Air Force (IAF)
Deputation to ARDC, HAL
Marathahalli Post
Bangalore-560 037, India
Email : ananth70@gmail.com

Jagdish Patange
SLRDC, Hindustan Aeronautics Limited
Balanagar, Hyderabad-500 042, India
Email : jagdish@hal-india.com

Abstract

It has been said that **"the purpose of the ears is to point the eyes"**. Over the last few years one of the most promising advances for Human Machine Interfaces (HMI) has been the development of 3-Dimensional Audio Warning System (3-DAWS) leading to improved Situational Awareness (SA) and Quality of Service (QoS). The existing warning audio tones/messages used in IAF aircraft are presently in the audio frequency range of 350 Hz - 4 KHz which may still facilitate spatial sound separation in azimuth but difficult to discern in elevation. A set of experiments were conducted using SLAB tool to check the efficacy of the 3-DAWS system and the improvements it offered. With encouraging results in terms of better perception to spatial separation, it is recommended to integrate 3-DAWS in fighter aircraft of IAF. A generalised architecture is also proposed in this paper.