

5DT <Fifth Dimension Technologies>

## PRESS RELEASE

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# 5DT releases Virtual Reality Flight Visualization System

5DT <Fifth Dimension Technologies> today released a novel Virtual Reality Flight Visualization System [VR FLIGHT VIZ].

The system provides air force pilots with a cost-effective tool to supplement normal flight training in air combat manoeuvring, mission training and joint operational training. It also provides a safe and cost-effective method of developing tactical procedures in both general and specific geographical areas.

5DT has developed technology to create virtual landscapes identical to the real landscape over which training or operational sorties are conducted. A virtual aircraft was also developed. The virtual aircraft looks like a real aircraft in terms of the outside view, the view from the cockpit and even symbology on the Head Up Display [HUD]. The virtual aircraft also handles like a real aircraft. An accurate performance model was developed to facilitate this.

VR FLIGHT VIZ offers four modes of operation: pre-briefing, simulation, de-briefing and the networked mode.

The pilots wear virtual reality headsets to experience the virtual world. A virtual reality headset contains miniature displays (computer monitors), headphones and a head tracking system that tracks the position and orientation of the pilot's head. Using the headsets, pilots can fly the virtual aircraft over the virtual landscape. This is the simulation mode.

Since the landscape is computer generated, pilots may explore it at any time. Pilots may explore a specific landscape before a mission. This is the pre-briefing mode. This mode of VR FLIGHT VIZ is extremely useful for mission planning and mission previews. Pilots may plan ingress and egress routes, as well as RV points. Action volumes, e.g. radar installations and surface to air missile [SAM] sites may be superimposed on the virtual landscape.

When a real sortie is conducted, the flight data is recorded on a data transfer unit. When the aircraft returns from the sortie, the flight data is downloaded from this data transfer unit to the VR FLIGHT VIZ system. Utilizing this data, the virtual landscape and the virtual aircraft, the whole sortie can now be recreated in virtual reality for de-briefing purposes. This is the de-briefing mode of VR FLIGHT VIZ. Pilots normally had to rely on their memories when a sortie was de-briefed. Various interpretations of what really happened sometimes led to heated arguments. With VR FLIGHT VIZ, this is something of the past. The recorded flight data is used to position the different aircraft during the sortie. When the pilots look around they are able to see each other's aircraft. It is possible to go forward or backward in time to a specific

event. It is also possible to freeze the playback at a specific instant. It is also possible to view the events from different viewpoints, e.g. from any of the aircraft or from a fixed viewpoint on the ground or in the air.

The system can be networked to accommodate up to 16 aircraft. This will allow pilots to fly against each other in the networked mode. Different aircraft, with different performance models, may be pitted against each other in a dogfight.

One of the biggest advantages of VR FLIGHT VIZ is its price tag. The system runs on a Pentium II computer fitted with a graphical accelerator card. 5DT has developed sophisticated software algorithms that makes it possible to view the landscape in real time (more than 40 frames per second). By using a virtual reality headset instead of an expensive dome projection system, the price tag of the system was reduced significantly. The result is that a 16 station VR FLIGHT VIZ system can now be afforded by any air force in the world.

“We knew from the beginning that personal computers would become powerful enough, and that the resolution of virtual reality headsets would become high enough, to run applications like this. That time has come!” said Paul Olckers, Managing Director of 5DT.

Les Bennett, an ex-fighter pilot, has the following to say about VR FLIGHT VIZ: “I wish I had this tool 20 years ago. VR FLIGHT VIZ provides the user with an extraordinary visualization and learning experience.”

5DT is a world leader in the field of Virtual Reality. Based in the Persequor Technopark in Pretoria, South Africa, 5DT develops, produces and distributes virtual reality hardware and software systems. 5DT also develops turnkey projects for clients.

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Virtual Reality is a technology that needs to be experienced. We would therefore like to invite you to stand **8-C-11** (Hall 8, Aisle C, Number 11) to come and experience this exciting technology for yourself.