The Humble Smartlink Revisited

The History Of and Information About Smartguns

Origins

The first smartgun systems were developed independently by the US and German militaries in the 1990s. By 2001, smartguns had been adopted by several corporations and were beginning to appear on the street. The US military created the Milspec Smartgun Standard (MSS1) in 2003, after disastrous compatibility problems amongst the smartguns used in central America caused embarrassing problems and several fatalities. Today, almost every smartsystem in the world conforms to this standard. To ignore it means ignoring the large profits to be made selling smarlinks to the US military. In 2013 an improved standard (MSS2) was released, though it has yet to be not been universally adopted. The army considered it too expensive for its benefits and has yet to make compliance a requirement in weapons trials.

[IMAGE - Smartguns, stylish and deadly]

The MSS1 standard was essentially very simple. It defined the data protocol between the smartgun and the neuralware smartlink, in terms of required and optional information/functions. This meant that one smartgun link mounted in a neuralware processor or smartgoggles could interpret the data from any smartlinked weapon.

Operation

At the very least, a smartgun must be able to do two things. First, it must transmit whether or not there is a target within its sights and range. It must also fire if it receives the command to do so. This basic system uses a laser or sonic sight in conjunction with a microprocessor to determine whether it's pointing at a target, and servos to control the firing mechanism. For the link to be effective, very detailed information about a weapons behavior must be stored in the microprocessor.

Every smartgun available today uses some of the extra information included in the MSS1 standard. At the very least, a smartgun's safety catch and clip ejection facilities can be controlled through its smartlink. The inclusion of the triangulation data necessary for a cyberoptic or smartgoggle targeting scope to be used is also universal. Other aspects of the standard are used when necessary. For example, all smartshotguns commonly available have cyber-controlled chokes. Smartlinked assault rifles have chipped rate selectors and 'ammo savers' that stops the gun from firing when there is no target in the sights.

Almost every weapon available today has smartchipping kits commercially available for it. Only the very rare or the entirely unsuitable (such as polymer one-shots) require the creation of a custom link from scratch. Someone planning to smart a weapon needs two products:

- A basic kit containing a laser sight, a microprocessor, wiring and an interface cable socket. These items are common to all smartguns, and are often sold as a box set.
- A conversion kit which contains the items specifically required by a specific model of gun. This kit will

definitely include the software the microprocessor uses and servos to automate the gun's functions. It may also include mountings specific to a weapon, or other case sensitive items.

If a custom smartlink is required, a good weaponsmith/programmer is required to create it. To be as effective as they are, a smartgun needs to be well tuned. This requires accurate ballistic information, quick and efficient software and a lot of 'tweaking'. Anyone who wants to create their own smartlink should be prepared to use a lot of time, money, ammunition and solder.

Advanced Systems

As well as those functions commonly packaged with smartchipping kits, other features of the MSS1 standard are available as add-on kits to already linked guns and/or existing smartlink processors.

Friend or Foe systems such as Tennerec LTD's Cookie Cutter, DataEdge Inc's Stutter Chip or Militech's SafeShot are the most popular upgrades. Cookie Cutter or Stutter systems designate 'friends' (with tags or through cyberoptic designation), and a smartgun using this system will not fire (or will stop firing) if a tagged friend walks into the firing line. SafeShot works in the opposite way, only firing if the target has been designated an enemy (usually via a Times^2 Plus screen).

Techtronica's Digital Weapon Uplink range takes advantage of several of the MSS1 standard's expansion areas. The basic package transmits exhaustive weapon performance data to a user's cyberoptic, while options include audio control (removing the need for interface cables). Another company markets a Neuralware sub-processor that links the smartlink unit with a cyberarm, controlling the cyberarm in a way that minimizes recoil. Dynalar's induction plate interface is a cable-less smart interface that is rapidly gaining popularity. While the method of connecting a smartgun to the processor is not covered in the MSS1 standard, Mylar's innovation is fully compatible, being capable of transferring enough data for even the MSS2 standard.

The MSS2 standard concentrated on ways of making a smartgun more accurate rather than adding extra control features. Smartlink sup-processors that are MSS2 compliant are capable of taking advantage of the CyberOptic Triangulation (COT) or the Multi Beam Tracking (MBeT) targeting systems. COT smartguns mount a high resolution video feed above the barrel, which feeds video images of what the gun is aimed at into a reticule in a cybereye. This enables rapid, accurate target acquisition as well as the possibility of shooting around corners without showing your head. An MBeT smartgun mounts several lasersights, each with a different alignment. These analyze the movement of targets, allowing accurate 'leading' of fast moving vehicles or dodging people. Currently, COT and MBeT smartguns are very expensive for their actual benefits, so few are easily available.

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