



Satcom terminals integrated with the PIM. Photo courtesy Paradigm Communication Systems

The significance of satcom simplification

Simplifying satcoms is a topic that we've heard a lot about in recent years, with the need to get satellite communications capabilities up and running as quickly and easily as possible a key driver in innovation.

Tom Farmer, Head of Marketing, Paradigm Communication Systems

What do electric vehicles, modern methods of construction and satellite terminals have in common? They're different sectors, use different distribution models and attract varying levels of public interest but, they're all testbeds for innovation. Innovation that feeds directly into the evolution of our infrastructures.

A means of achieving economic growth

Typically, we view innovation as a means to achieve economic growth; as stimuli which, in conjunction with institutional framework and sufficient finance, leads to progress. But for progress to be meaningful, it must be sustainable. The role of innovation therefore is not limited to growth of infrastructure but includes its protection.

For those time-served in the satcom industry, it is well understood to be a contributor to the protection of infrastructure. Examples of this can be quite broad and visible, from providing immediate communications capability for NGOs coordinating disaster response efforts, to expanding

the capabilities of border patrol units working across remote terrains without consistent coverage from existing telecommunication networks. Some are less visible and very particular, such as special operational forces seeking military level encryption in high danger zones or, the fall-back for a political broadcast. In all cases, the efficacy of the technology is the result of substantial innovation.

Key to realising the potential of this innovation in satcom, as in any other field, is the ease and speed with which it can be adopted. Gone are the days that saw satellite communications reliant on a team of trained satcom engineers with myriad tools and a continual presence. Quick to deploy satellite terminals have become progressively smaller and more portable, with higher throughputs and energy efficiency. But the key to their increasing popularity with military, government, NGOs, and commercial sectors alike is the recent transformation in their ease of use.

Behind the scenes innovation

There's an abundance of new projects targeting LEO and MEO constellations, which promise alternative low latency broadband Internet systems for the masses. But, whilst these endeavours tend to be funded by consumer-facing brands and attract a lot of media coverage as a result, there have been significant strides in innovation behind the scenes, by those operating in the established GEO space. The result is technology that is sufficiently advanced that even though today its use may not be as ubiquitous as the mobile phone, it is as simple to use.

The prevalence of tool-free satellite terminals, which relies on auto-acquire technology to control orientation axes, removed the need for specialist equipment and personnel. This capability has evolved further with the advent of

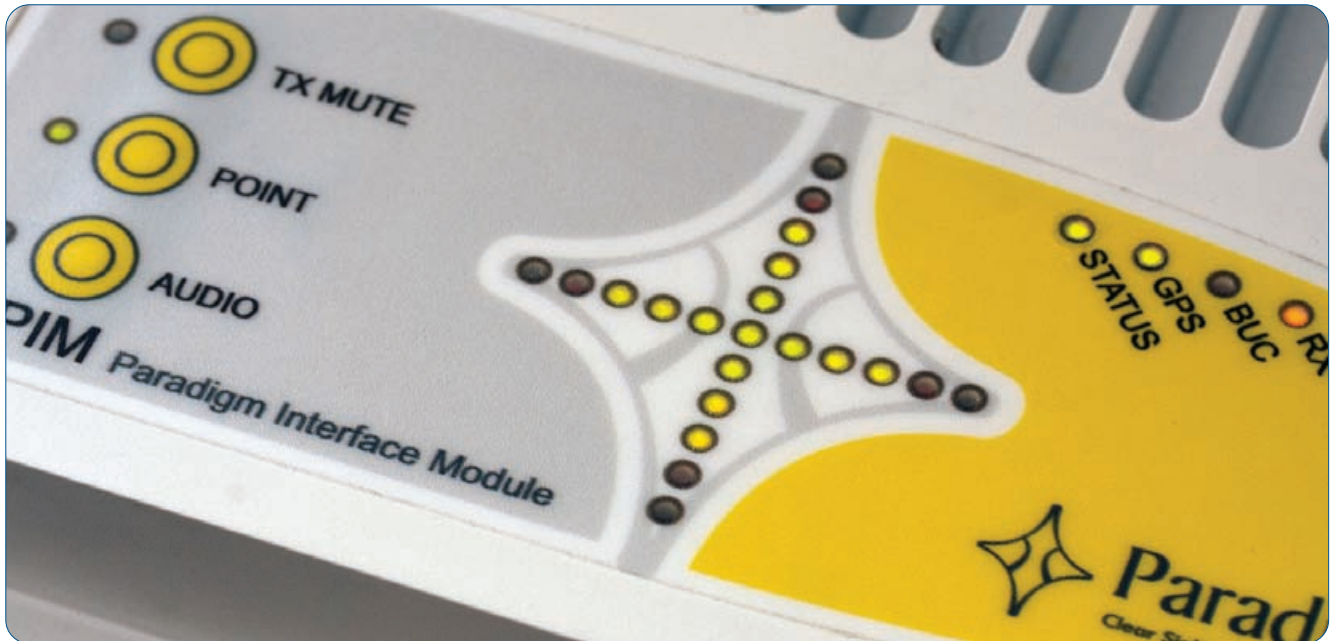
C- & KU-BAND CAPACITY FOR THE EASTERN HEMISPHERE

Yamal-601 (49°E) Yamal-402 (55°E) Yamal-401 (90°E) Yamal-300K (183°E)

The wide coverage areas of Yamal satellites enable communication services delivery to different parts of the world for the purposes of Oil & Gas, Government, Aviation, Maritime, Education and Emergency segments. Yamal Satellite Capacity is successfully used for communication links and data transmission, TV distribution, occasional use, trunking, backhaul, inflight and maritime connectivity.

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LED display and push button operation of the PIM. Photo courtesy Paradigm Communication Systems

integrated manual systems that offer an exceptionally intuitive user interface. Examples such as the PIM® (Paradigm Interface Module) offer a simple LED orientation display and simple push button operation. The pointing process is as simple as that found in a motorized, auto-acquire version but also offers reduced cost, weight, and increased portability, while often delivering a quicker speed to satellite acquisition.

This simplicity is important because, in the critical conditions and extreme environments often faced by those using satellite terminals in the field, equipment that is easy to use reduces the risk of failure and increases confidence levels of field operatives.

Freedom of choice

The innovation isn't limited however to the design and function

of a terminal's interface. Alongside the ease of use for field operatives, it is important that the organizations responsible for the procurement of satellite communications equipment have the freedom of choice necessary to build a communications ecosystem fit for their particular purposes. The design of a module that incorporates all of the necessary, specified components, from modem to router, alignment tool and power distribution, provides flexibility. The ability to integrate the module with a broad range of terminal types means that those operating with different equipment, perhaps across a range of locations, can maintain a common interface.

The benefit of this is familiarity. A common interface requires substantially less training and significantly increases operatives' familiarity, once again reducing risk and ensuring user-confidence.

This is an objective borne out recently in the UN's experience of adopting Paradigm's PIM-powered terminals. Their emergency response units require reliable backhaul links that ensure stable communications over a suitable bandwidth. Operating under pressure and in locations across the globe, the facility for simple, common operability and peer to peer coaching secured substantial cost savings and, improved user confidence significantly, paving the way for common standards across humanitarian responders.

This is some of the most advanced satcom technology in the world, but you don't have to be tech-savvy to use it. In fact, you need only a very basic level of understanding, the training for which can be delivered in less than 30 minutes. Think of it as taking a new car for a test drive to familiarize yourself with the steering, brakes, and dashboard controls; or visiting an Apple store to compare the latest iOS operating system with your existing Android.

Satellite communication's continuing role in the protection of infrastructure determines that the simplification of its use is of paramount importance. As with electric vehicles and modern methods of construction, the true innovations in this field will be born of user-focused design and an insatiable appetite for taking the world's most advanced technology and making it simple to use. ■



SWARM - fast, field-ready comms using the PIM

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