



# *The* VSAT CONGRESS



## **Strange Technology Stretches**

*Truth is more than theory, there's more than we know and our static universe could soon be proven to be expanding.*

**Chris Gregory**

Director of Processing, HawkEye360



# The Panel

**Chair: Chris Gregory**  
*Director of Processing*  
**HawkEye360**



**Solyman Ashrafi**  
*Managing Partner*  
**NxGen Partners**



**Rob Torres**  
*Vice President*  
*Engineering, Hughes*



**Ninh Le**  
*Director*  
*Network Systems and Architecture*  
**Panasonic Avionics Corporation**



**Barry Matsumori**  
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**Alvaro Sanchez**  
*General Manager*  
**Integrasys**



**Stephen Pearce**  
*VP Engineering*  
**VT iDirect**



**Kalpak Gude**  
*President*  
**Dynamic Spectrum Alliance**



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# Questions For The Panel: Vertical Markets

- ✦ Cellular technology may extend 10s of km offshore in the near future and will impact the use of satellite connectivity in the maritime and energy vertical markets. Growth in IoT/M2M, connected-car, and airborne connectivity is robust.
- ✦ ***What are the technical challenges and breakthroughs required to ensure satellite technology defends its current positions and benefits from the growth of these and other verticals?***



# Questions For The Panel: Allocating Spectrum

- ✦ How does technology and policy need to transform to eliminate areas where spectrum is perceived to be scarce?*
- ✦ Is scarcity due to the way we allocate spectrum or to the limitations of our devices and algorithms?*



# Questions For The Panel: 5G

- ✦ How will space technology complement and thrive along side 5G terrestrial infrastructure?*
- ✦ Is the capacity of space technology sufficient to bridge the gap between islands of dense 5G connectivity?*



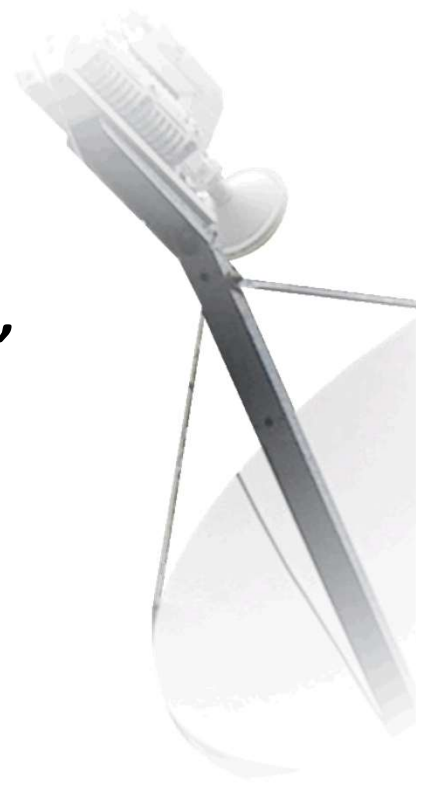
# Questions For The Panel: Spectral Efficiency

- ✦ Where are we in the evolution of spectral efficiency improvements?*
- ✦ Will there be more significant waveform breakthroughs?*
- ✦ Is there a Moore's Law style metric to be applied to satellite links?*



# Questions For The Panel: Satellite Networks

- ✦ LEO, MEO, GEO, and HAPS based networks have traditionally been operated as separate businesses, forcing the end user to make a decision on which topology is best. For years, the industry has been working to make satellite networks integrate seamlessly into terrestrial networks, but there has been little focus on agility between satellite topologies.
- ✦ ***What key innovations would enable cost effective, multi-mode satellite terminals and applications?***



## Questions For The Panel: **Beyond Communications**

- ✦ Most of our industry focuses on an "IP Connectivity / Internet Access" use case. M2M / IoT is a notable exception, and we're also seeing more secondary payloads to implement sensor, tracking, and imaging applications to derive more revenue from space assets.
- ✦ ***What non-traditional applications might communications satellite operators consider to leverage extra capacity?***

