Metamaterial Surface Antenna Technology:
A new generation of electrically scanned arrays

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Intellectual Ventures’ (IV) Metamaterials Surface Antenna Technology (MSA-T) is a new class of antenna technology that can electronically steer an RF beam rapidly and precisely over wide angles; without the need for moving parts or expensive phase-shifting components. Instead, a reconfigurable holographic grating is used to control both the radiation pattern and polarization emitted from an otherwise passive aperture. A first application of MSA-T will be the development of user terminals for the new generation of Ka-band High Throughput Satellites (HTS); serving communications-on-the-move customers in aeronautical, maritime and land transport markets.

In this presentation I will discuss our efforts at Intellectual Ventures to transition the design methodologies developed in the metamaterials community into a commercial application. I will also describe some of the technical advances made to date as well as how these map to industry requirements.