

14-Sep-18

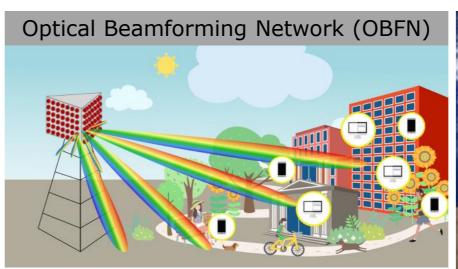
Real-Time Beamforming

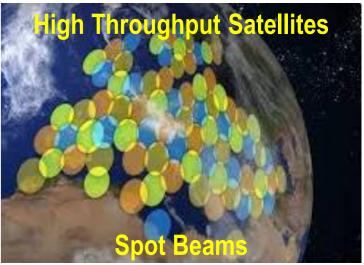
• Integrated microwave photonics platform developed under:



Low-power real-time configurability Implementation @26GHz and 60GHz

- Coverage & Capacity
 - High Speed (µs)
 - Instantaneous Bandwidth
 - Multibeam Capability



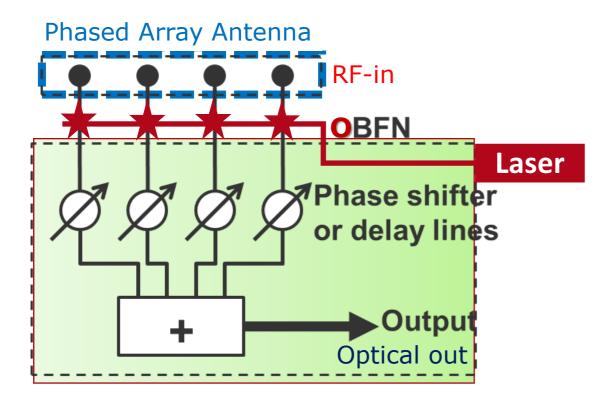


Scalability with multi-λ Radio over Fiber technology for low cost per bit

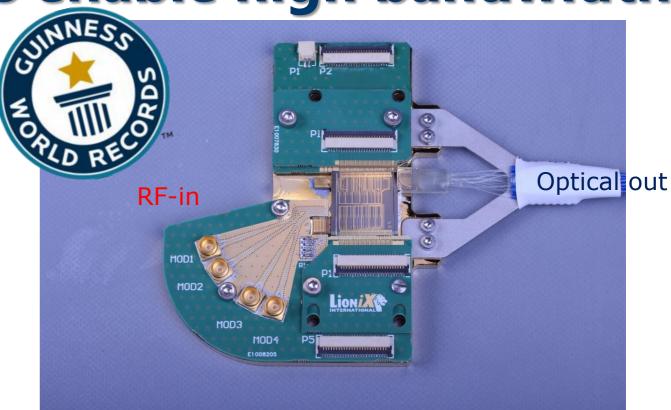


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True-time delays enable high bandwidth



- Rx Phased Array Antenna (+Amplifier)
- Optical carrier generated by **narrow-linewidth laser**
- Conversion RF-in at modulator -> MWP signal
- Photonic processing in Beamforming network
- Combined optical output transferred through fiber



Integrated OBFN Rx RR

- 4x1 iOBFN Receive
- Integrated laser
- Integrated modulator array
- External photodetector (for remoting)
- Ring resonator (RR) based continuous delay



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OBFN Rx RR Delay tuning 17.5–21.5 GHz

