Reasons Why LTE makes sense for Fixed
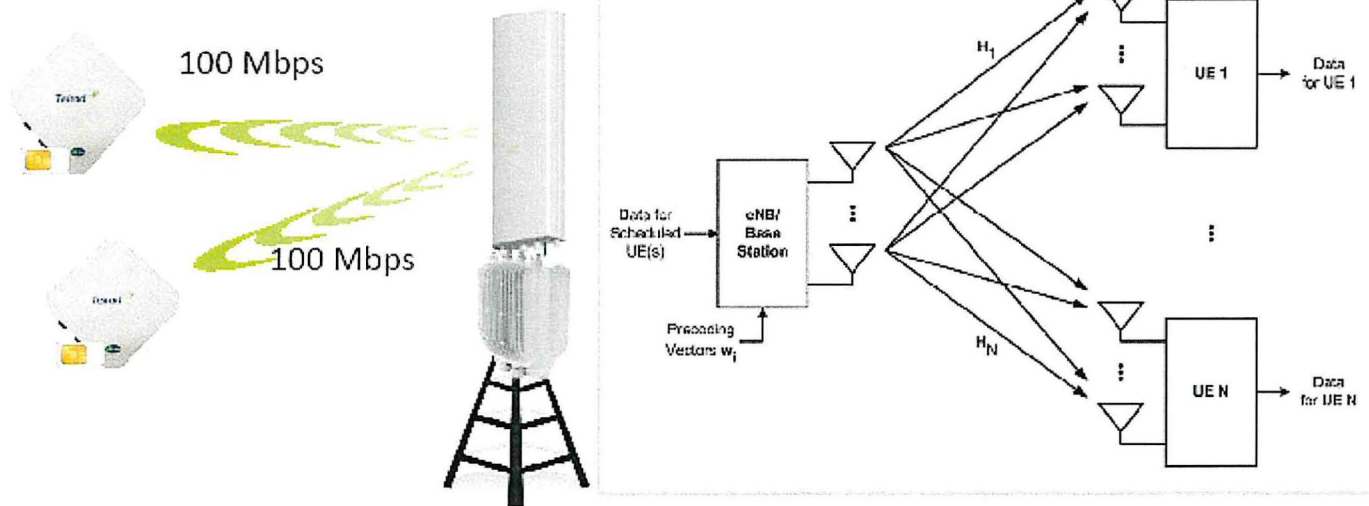
Business Generation

▸ Cost-effective **NLOS – more share per tower (reduces cost/sub)**

▸ Scalability

▸ Enables the ability to offer SLAs

▸ Exit strategy value

Business Protection (Managed Spectrum)

▸ Capacity Roadmap driven by Top Mobile Operators

▸ Lots of manufacturers - LTE is here to stay

▸ Carrier-Grade Reliability & Performance

▸ CPE options and manufacturers

▸ Available Talent Pool – information and engineers abound - number in the 000's

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MU-MIMO

100 Mbps

100 Mbps

Data for Scheduled UE(s) → eNB/ Base Station

Precoding Vectors w_i

H_1

H_N

UE 1 → Data for UE 1

UE N → Data for UE N

Highlights

Works with Any Telrad CPE

Optimized for fixed wireless

Improves spectral efficiency

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21

Peak Rates by Technology

	WiMAX 16e	LTE Category 4/5	LTE-Advanced Category 6
Max channel Bandwidth	10MHz	20MHz	40MHz
Sector Peak Rate	40Mbps	100Mbps	200Mbps
User Peak Rate	12Mbps	80-90Mbps	200Mbps

Typical BWA operator owns 20-40MHz total spectrum

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Capacity and oversubscription calculation with CPE8000 and CPE9000

- Oversubscribed data to sell
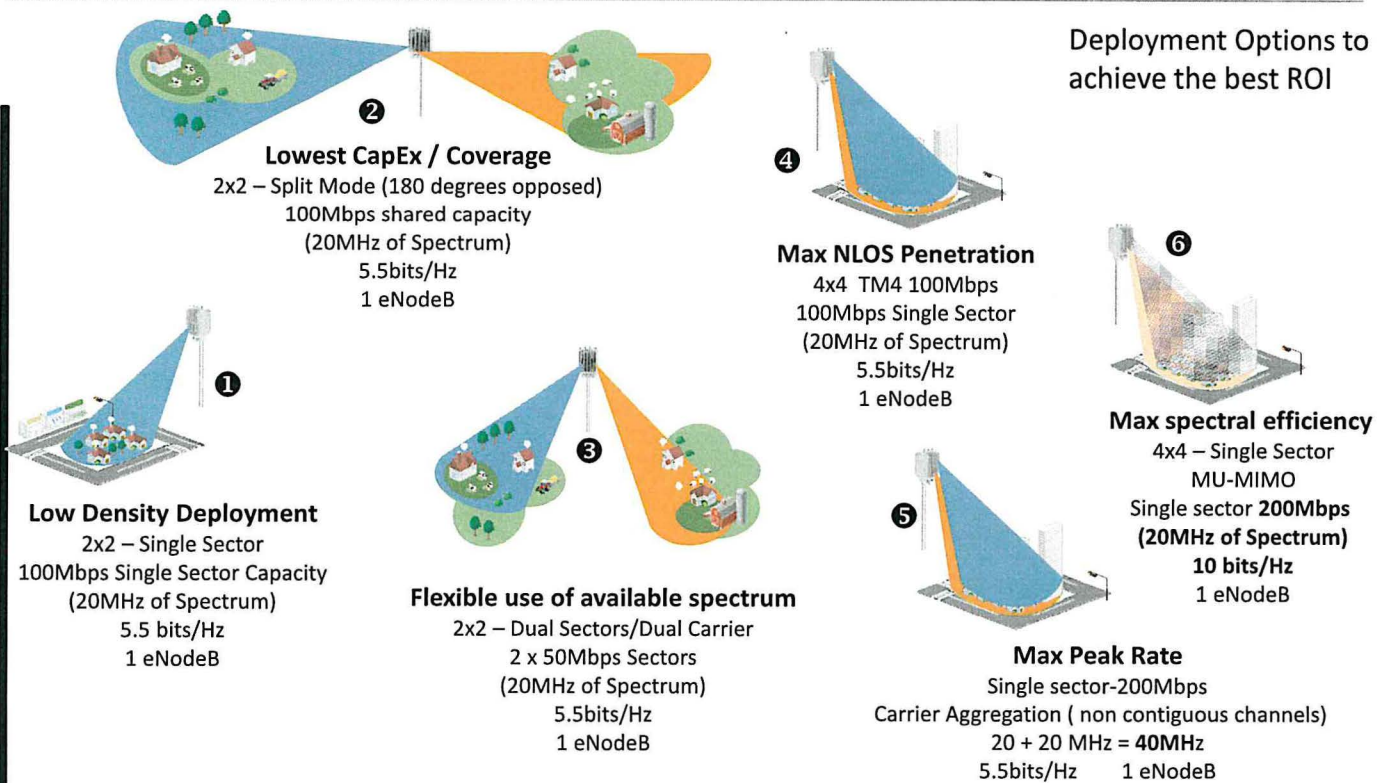 - 10:1 = 724.4Mbps DL / 97.4 Mbps UL
    - 25 users @ 10/1.5
    - 24 users @ 20/2.5
      - Total 49 users
    - 72 users @10/1
      - Total 70 Users

- With the Telrad solution these numbers can double in 2017 as we move to 10 bit/Hz. This can translate to double the throughput or double the users per carrier and this is possible with the same UE that is shipping today.
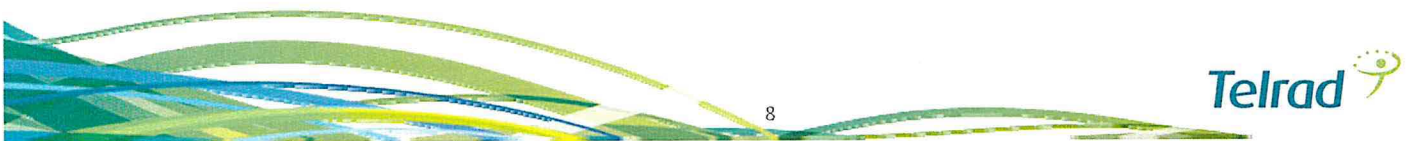
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Telrad Business Model - Deployment Flexibility
1 Radio, Multiple Deployment Options

Deployment Options to achieve the best ROI

❷ Lowest CapEx / Coverage
2x2 – Split Mode (180 degrees opposed)
100Mbps shared capacity
(20MHz of Spectrum)
5.5bits/Hz
1 eNodeB

❹ Max NLOS Penetration
4x4 TM4 100Mbps
100Mbps Single Sector
(20MHz of Spectrum)
5.5bits/Hz
1 eNodeB

❻ Max spectral efficiency
4x4 – Single Sector
MU-MIMO
Single sector **200Mbps**
(20MHz of Spectrum)
10 bits/Hz
1 eNodeB

❶ Low Density Deployment
2x2 – Single Sector
100Mbps Single Sector Capacity
(20MHz of Spectrum)
5.5 bits/Hz
1 eNodeB

❸ Flexible use of available spectrum
2x2 – Dual Sectors/Dual Carrier
2 x 50Mbps Sectors
(20MHz of Spectrum)
5.5bits/Hz
1 eNodeB

❺ Max Peak Rate
Single sector-200Mbps
Carrier Aggregation (non contiguous channels)
20 + 20 MHz = **40MHz**
5.5bits/Hz   1 eNodeB

→ **Increase Subscriber capacity or Performance** →

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