



INSTALLING  
RELIABILITY



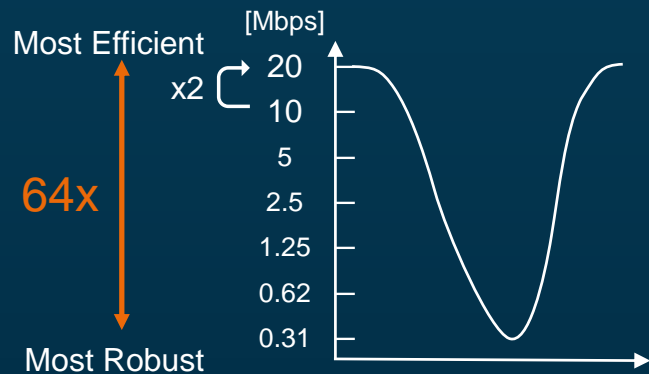
# SHAPING THE FUTURE SKYWAN 5G RELEASE 2.0

[www.ndsatcom.com](http://www.ndsatcom.com)

64x

## Boost Throughput ACM MESH

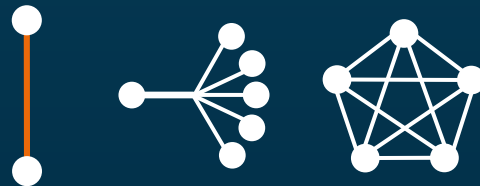
- ACM manages Link throughput
- remote-2-remote
  - dynamic weather response
  - robust link or sunshine bonus



3x

## Extend Flexibility Triple Modem System

- Applications use ONE box
- SCPC
  - DVB-S2
  - MF-TDMA



4yr

## Ensure Business Continuity Long Term Supported Software

- LTS Software Maintenance
- security + stability updates committed
  - no expensive SW upgrades





Adaptive Coding & Modulation	optimizes speed for any link independent of direction and channel	optimizes speed towards receiver, return channel concept differs (MX-DMA, A-TDMA)
Applicability	Separated or same channel for outbound & inbound, expandable up to 16 channels	Separated outbound & inbound
Topology	SCPC, STAR, True-MESH (hubless single hop)	STAR (remote to remote requires double hop)
Service Continuity	ACM control function in every Backup node	Backup requires second hub



Adaptive Coding & Modulation	yes	yes
Applicability	Exclusive transmitter and receiver per station	TDMA transmitter to all other TDMA channels, receive on one TDMA channel
Topology	SCPC (Point-2-Point) with no self-reception	STAR or MESH networks
Engineering	Station bring-up with only Tx/Rx frequency optionally with 2x2 channels	Full MF-TDMA channel flexibility DVB-S2 links in addition to MF-TDMA channels
NMS	P2P links in addition to MF-TDMA network	

# MORE IMPROVEMENTS



DVB

## Transport on Next Level ACM Terminal Groups

- Group Terminals with similar link conditions
- grouped terminals share ACM ModCods
  - pack more bits into DVB-S2 frames
  - lowers SatCap costs



NMS

## Simplified SW Rollout TDMA Interop Mode / Multicast SW Deployment

- Independent deployment sub-channel
- release independent SW upgrades
  - SW upgrade of inactive nodes at later time
  - secure multicast upload of SW images

# SHAPING THE FUTURE - SKYWAN 5G R2.0

Release date: Nov 30, 2020

## ULTIMATE NETWORK FLEXIBILITY WITH TRIPLE WAVEFORM

MF-TDMA



Any2All

Mesh & all topology subsets



Star



Multi-Star



Hybrid

Point-2-Point



SCPC

20 Mbps  
40 Mbps with LINK Aggregation  
Redundancy Option

DVB-S2



P2MP

Forward channel point to multipoint  
MF-TDMA return channels

U  
S  
P

## WORLDS ONLY MESH ACM



16APSK



8PSK



QPSK



QPSK



8PSK



8PSK



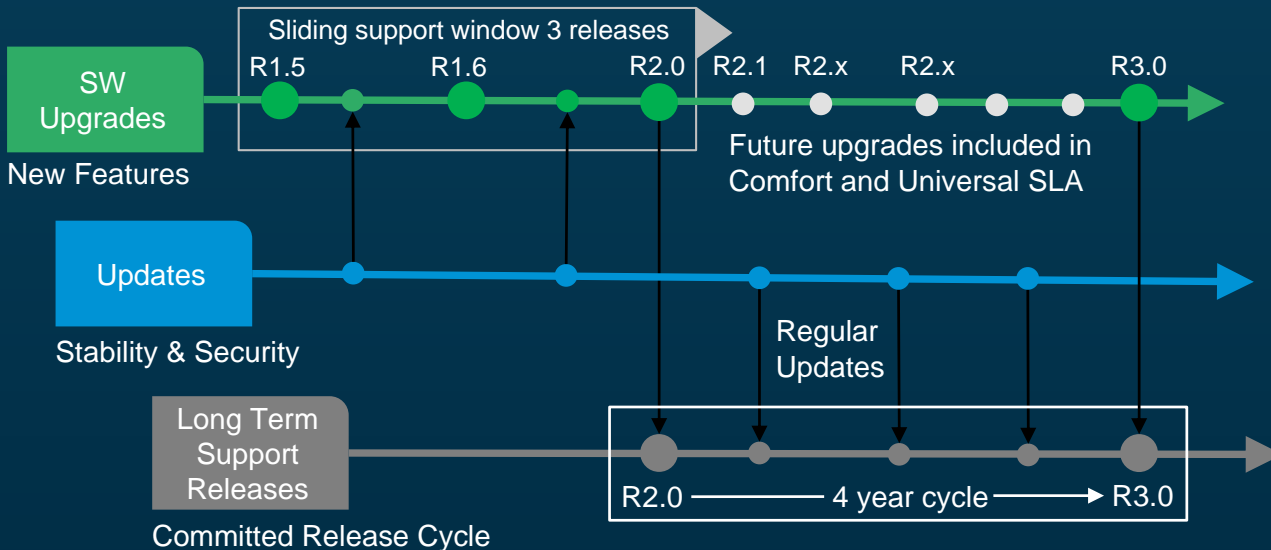
16APSK

LINK Robustness  
MODCOD down shift

Mission  
critical  
traffic

Data rate Optimization  
MODCOD up shift

## SW SUPPORT WINDOW & LONG TERM SUPPORT



## DVB-S2 OUTBOUND ACM GROUPS

U  
S  
P

- Terminal Group Specific MODCOD in Forward Channel
- Link Efficiency boost: maximizes throughput per terminal group
- Return link benefits from flexible MF-TDMA waveform

## SW Deployment Sub Channel

R2.0 brings interop layer supporting:

- Communication between different major/minor sw versions
- Tremendous help for over the air software updates: start with partial network update and migrate nomadic sites step by step later
- Efficient Multicast File Distribution