BHARAT DEFENCE SUMMIT – 2024

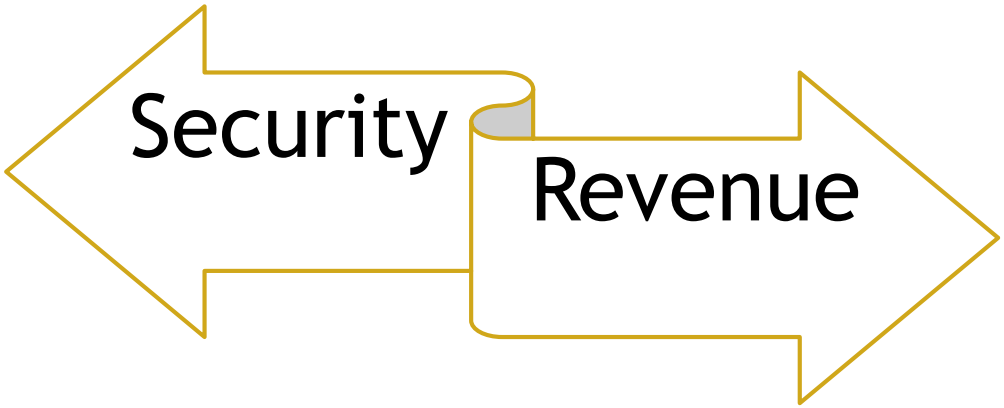
Session 2: Tactical Comn Systems: Innovations in Digital Infrastructure and Workforce Developments

TACTICAL COMMUNICATION SYSTEMS : NEW DEVELOPMENTS

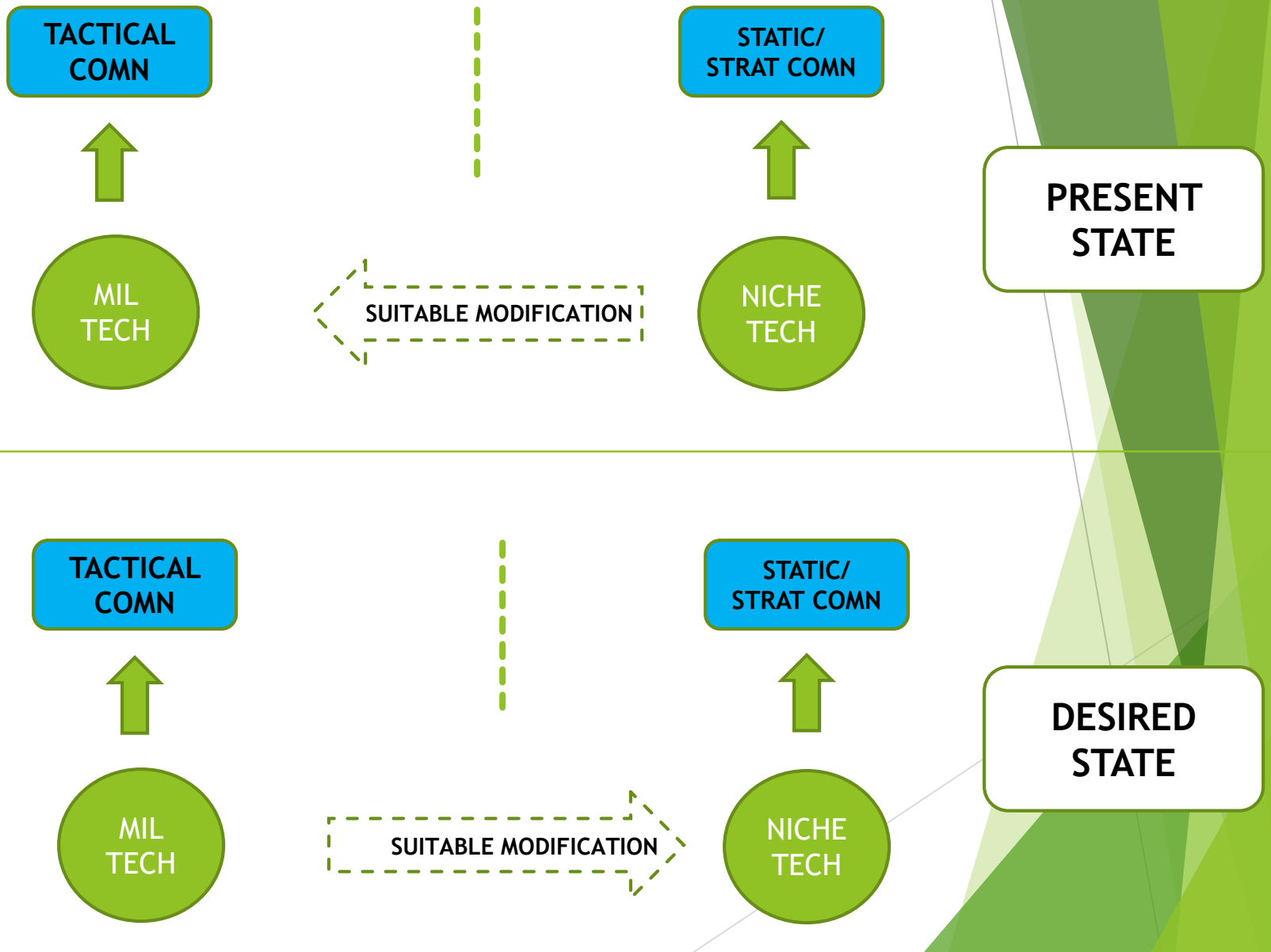
APPROACH

Defence / Mil Reqmts

Industry



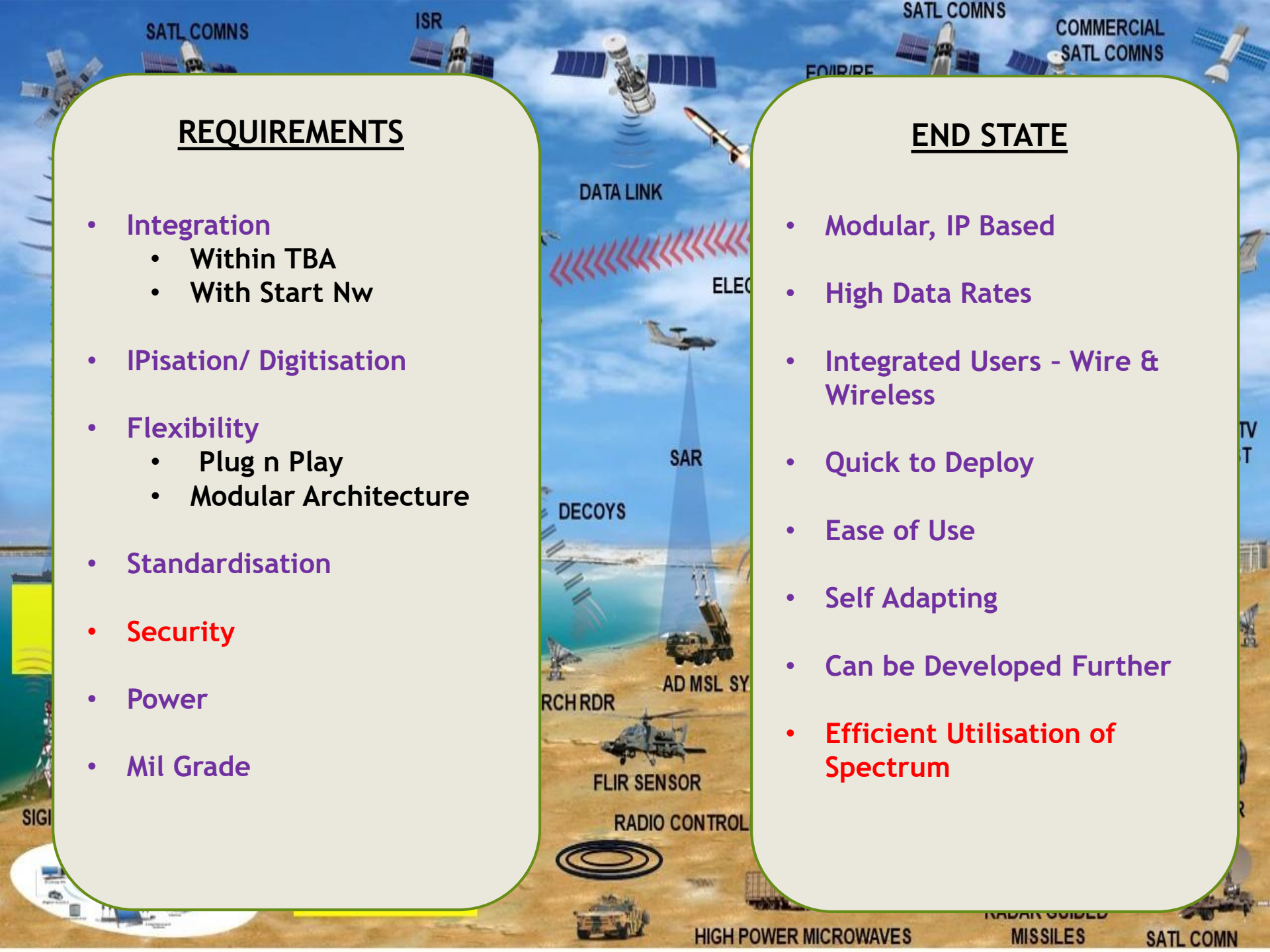
APPROACH


TACTICAL COMN
STATIC/ STRAT COMN
MIL TECH
SUITABLE MODIFICATION
NICHE TECH
PRESENT STATE
TACTICAL COMN
STATIC/ STRAT COMN
MIL TECH
SUITABLE MODIFICATION
NICHE TECH
DESIRED STATE

APPROACH

2G	Frequency Hopping
3G	Spread Spectrum
4G	???
5G	Network Slicing, IoMT
6G	AI, Sensing, Positioning


SATL COMNS
ISR
SATL COMNS
COMMERCIAL SATL COMNS
SPACE OPERATIONS
EO/IR/RF SENSOR
NAVIGATIONAL SIGNALS
ANTI SATELLITE WEAPONS
DATA LINK
SLAR
RADAR ELECTRONIC ATTACK
IO BROADCAST
ANTI RADIATION MISSILES
IFF SIGNALS
AIR OPERATIONS
CIVIL AM/FM/TV BROADCAST
ELECTATTACK
COMD GUIDED MSL
SAR
GPS AIDED BOMBS
CRUISE MSL
DECOYS
ISR
RF SENSORS
MARITIME OPERATIONS
SEARCH RADARS
CIVIL AIR RADAR
GPS JAMMERS
AD MSL SYS
LAND OPERATIONS
SEARCH RDR
COMN jAMMERS
SATL COMN JAMMERS
FLIR SENSOR
ARTILLERY
LASER DAZZLER
SIGINT
RADIO CONTROLLED IED
INFO OPERATIONS
GRND BASED SVL
RADAR GUIDED MISSILES
HIGH POWER MICROWAVES
SATL COMN

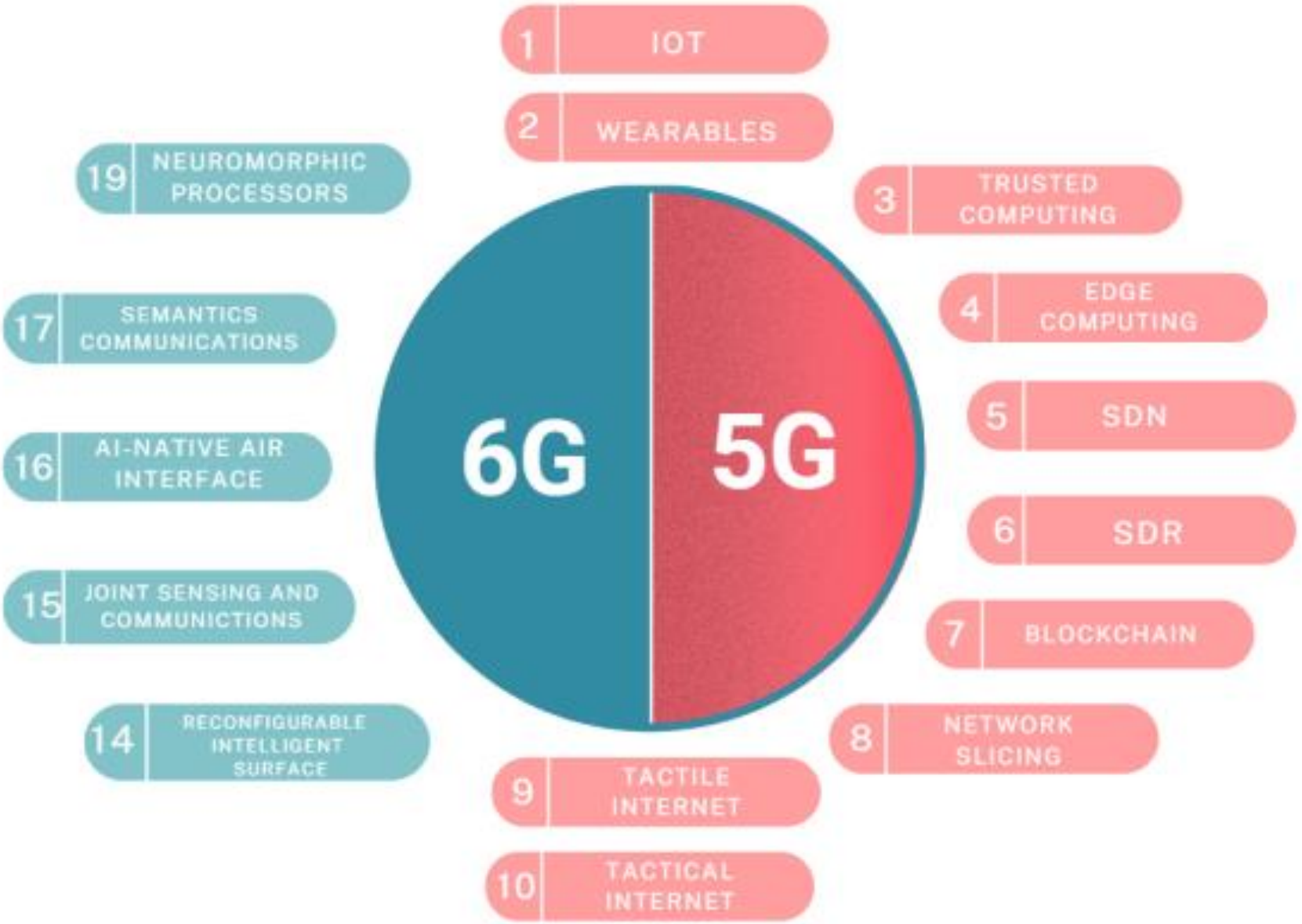


REQUIREMENTS

- Integration
  - Within TBA
  - With Start Nw
- IPisation/ Digitisation
- Flexibility
  - Plug n Play
  - Modular Architecture
- Standardisation
- Security
- Power
- Mil Grade

END STATE

- Modular, IP Based
- High Data Rates
- Integrated Users - Wire & Wireless
- Quick to Deploy
- Ease of Use
- Self Adapting
- Can be Developed Further
- Efficient Utilisation of Spectrum


1 IOT
2 WEARABLES
3 TRUSTED COMPUTING
4 EDGE COMPUTING
5 SDN
6 SDR
7 BLOCKCHAIN
8 NETWORK SLICING
9 TACTILE INTERNET
10 TACTICAL INTERNET
14 RECONFIGURABLE INTELLIGENT SURFACE
15 JOINT SENSING AND COMMUNICTIONS
16 AI-NATIVE AIR INTERFACE
17 SEMANTICS COMMUNICATIONS
19 NEUROMORPHIC PROCESSORS
6G
5G

# Use Cases	5G/6G Use Cases In Tactical Environments	Applied Emerging technologies
UC 1	Combat Search and Rescue (CSAR)	IoT, Edge Computing
UC 2	Medical Evacuation (MEDEVAC)	IoT, Wearables
UC 3	Classic Voice Service Virtualization	Network slicing
UC 4	Electronic warfare	Blockchain, Semantic Communications, AI-native interface, RIS, SDR
UC 5	Troop Training	Wearables, Tactile Internet, AI-native interface
UC 6	Situational Awareness	SDR, AI-native interface, Neuromorphic processors, JSC
UC 7	Military logistic report	IoT, Tactical Internet, AI-native interface, Neuromorphic processors
UC 8	Fire Control/Support	IoT
UC 9	Military Intelligence Operations	Trusted Computing, SDN, Blockchain, Network slicing
UC 10	Command and Control Post	Trusted Computing, Network slicing, Neuromorphic processors

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