

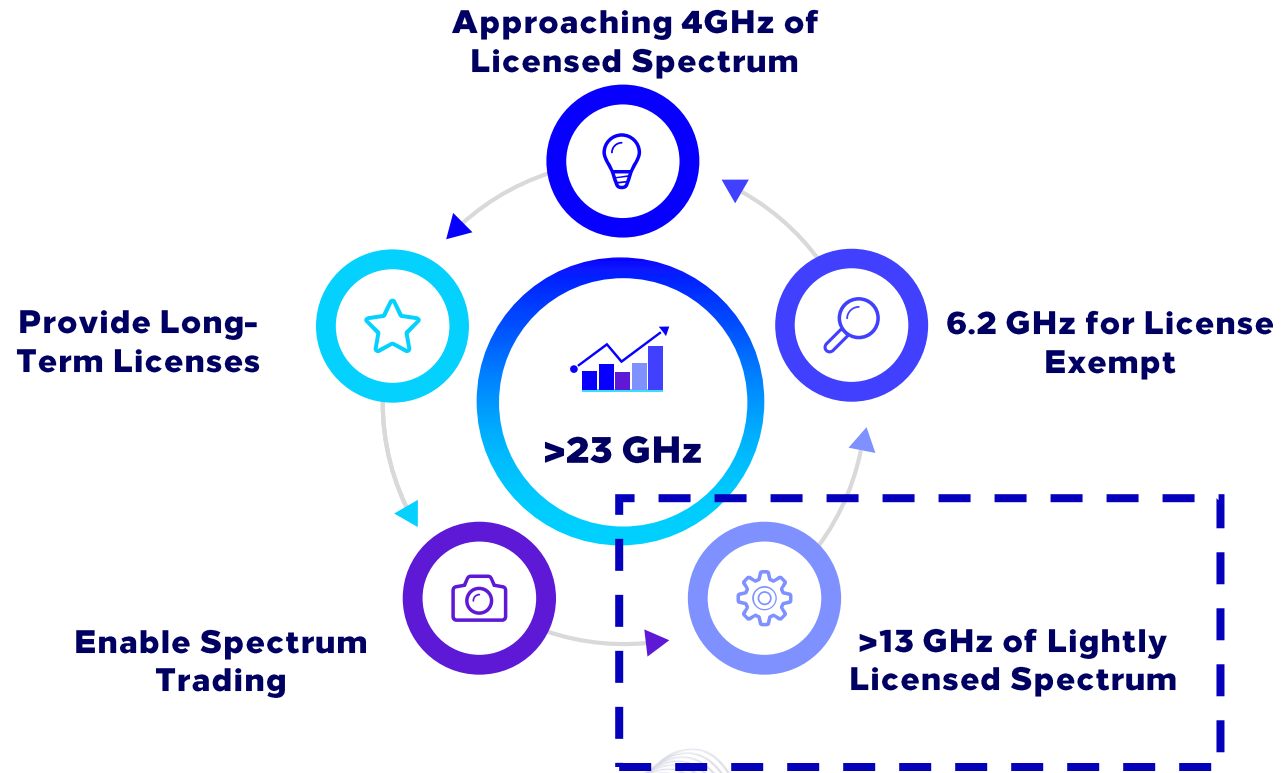


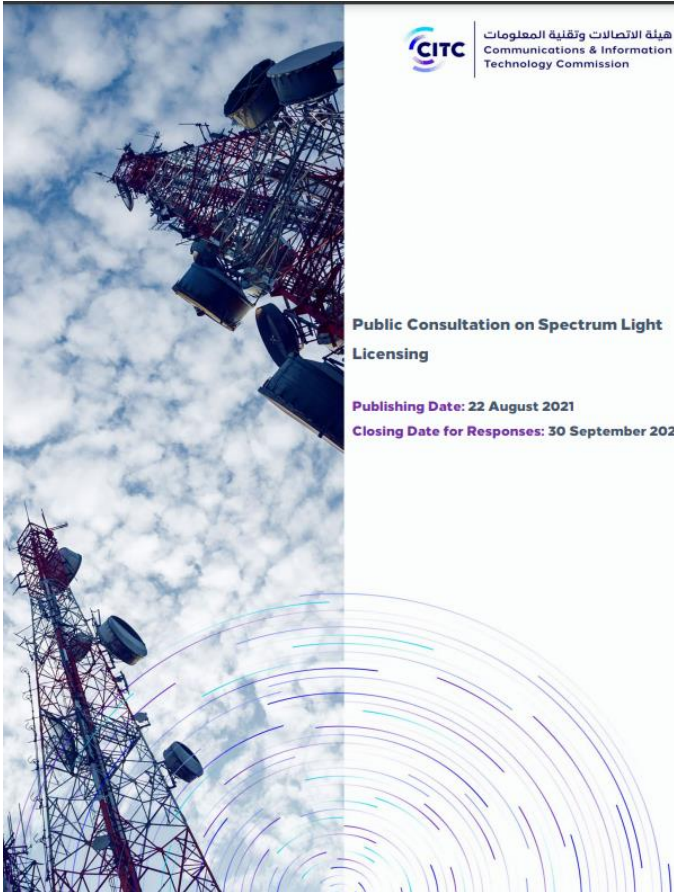
هيئة الاتصالات والفضاء والتقنية  
Communications, Space &  
Technology Commission

# **Spectrum Sharing initiatives in KSA**

December 15, 2022

# Historic Expansion of Spectrum for Commercial Use





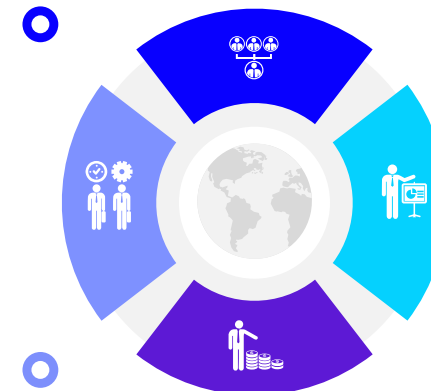
- CST published a public consultation in August 2021.
- After analyzing the responses, CST worked on modifying its approach in terms of the :
  - Structure of the regulation
  - Rollout plan
  - Targeted frequency bands, Which now CST is targeting 6GHz and 4GHz bands
- Currently, CST's approach for light licensing is summarized in the diagram below.

## Main Document

Document includes all the general conditions regarding the light licensing regime

## Shared band

Introduce a dynamic database for accessing the spectrum



## Annex

Annex for each band contains the technical conditions and other aspects related to the band.

## Cost

Low cost for accessing the spectrum to empower the technologies within the band

# The 6GHz Band



## Defining the WLAN Spectrum Bands

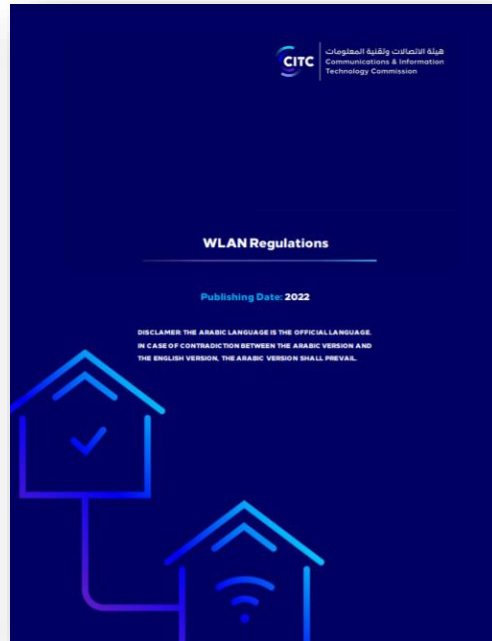
Define the bands that can be used for WLAN applications such as Wi-Fi 5, Wi-Fi 6/6e, etc.



## Sharing Conditions

Impose technical and operational conditions to enable sharing and coexistence with other services and users.

## WLAN Regulations



## Equipment Type Approval

Guidance on gaining the approval to import devices into the kingdom.



## Spectrum Access Regimes

Introduce the light licensing regime that permit the use of WLAN band with more flexible power restriction

## Current Use

### Indoor Environment

#### Device Category

Low power indoor (LPI) devices

#### Access Regime

License-Exempt

## Future Use

### Outdoor Environment

#### Device Category

Standard Power (SP) devices

#### Access Regime

License-Exempt  
AFC control

## The Kingdom's Position on Unleashing the Full 6GHz

1

The Kingdom is leading the release of the full 6 GHz for unlicensed uses in EMEA region.

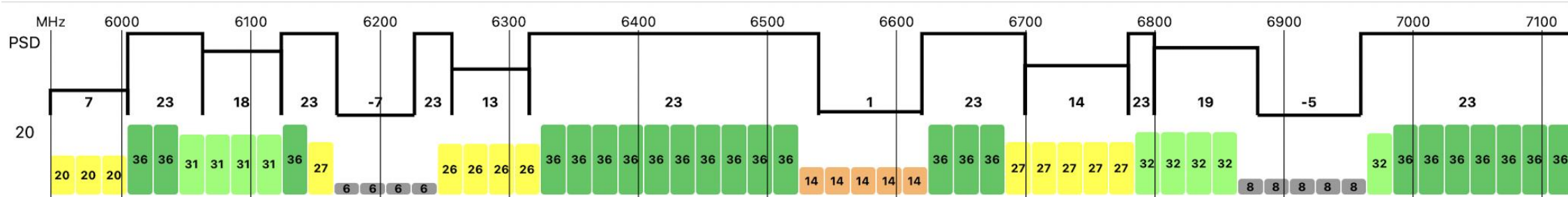
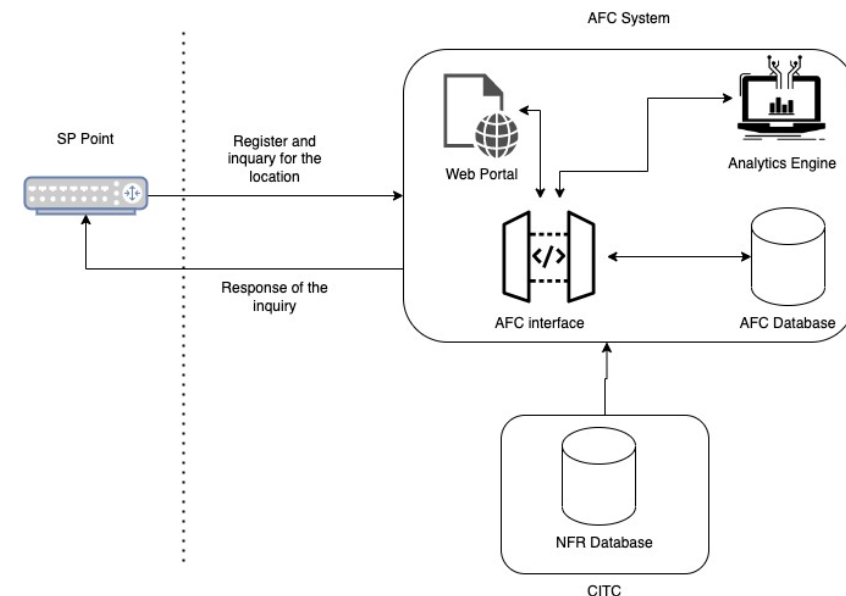
## Percentage Increase of Spectrum

200%

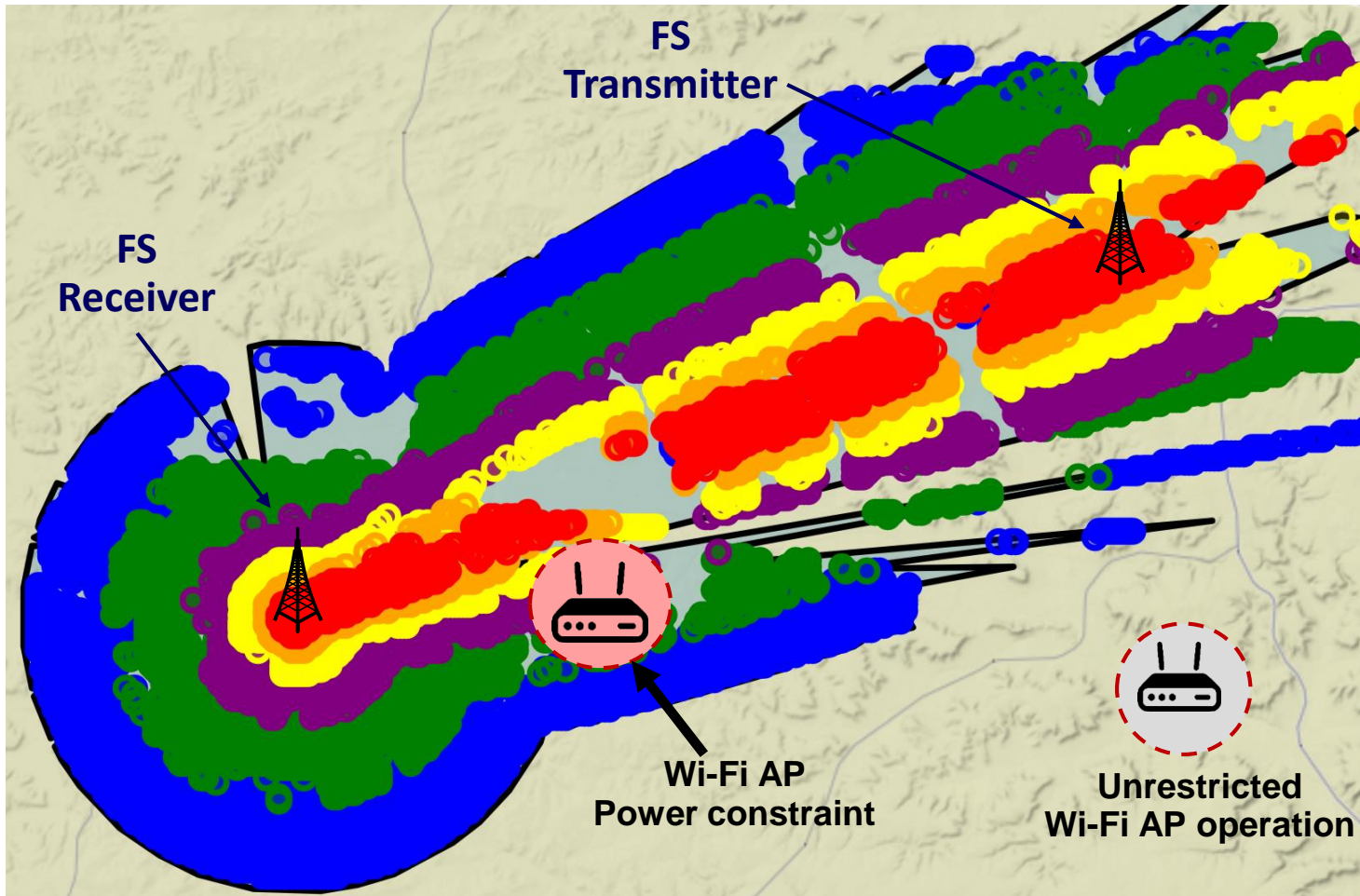
Increase in the amount of spectrum made available for Wi-Fi technologies compared to the previous status in the Kingdom.

## An Automated Frequency Coordination (AFC) System that would prevent interference by Wi-Fi 6E devices with incumbent licensed operators in the 6 GHz band.

1. Auto-locate (with GPS or other methods)
2. Report to AFC the AP location, AP CITCID, serial number.
3. AFC Service will query the CITC Database for incumbent operations in proximity to AP's location.
4. AFC Service will reply back with permissible channels and power levels for that AP to avoid interfering with any incumbents.







- The AFC calculates protection contours around every incumbent receiver
- The AFC accounts for device height and position uncertainty in availability calculation
- Permissible operating frequencies/channels/EIRPs are determined from Incumbent Protection Points inside uncertainty area





### **Hewlett Packard Enterprise**

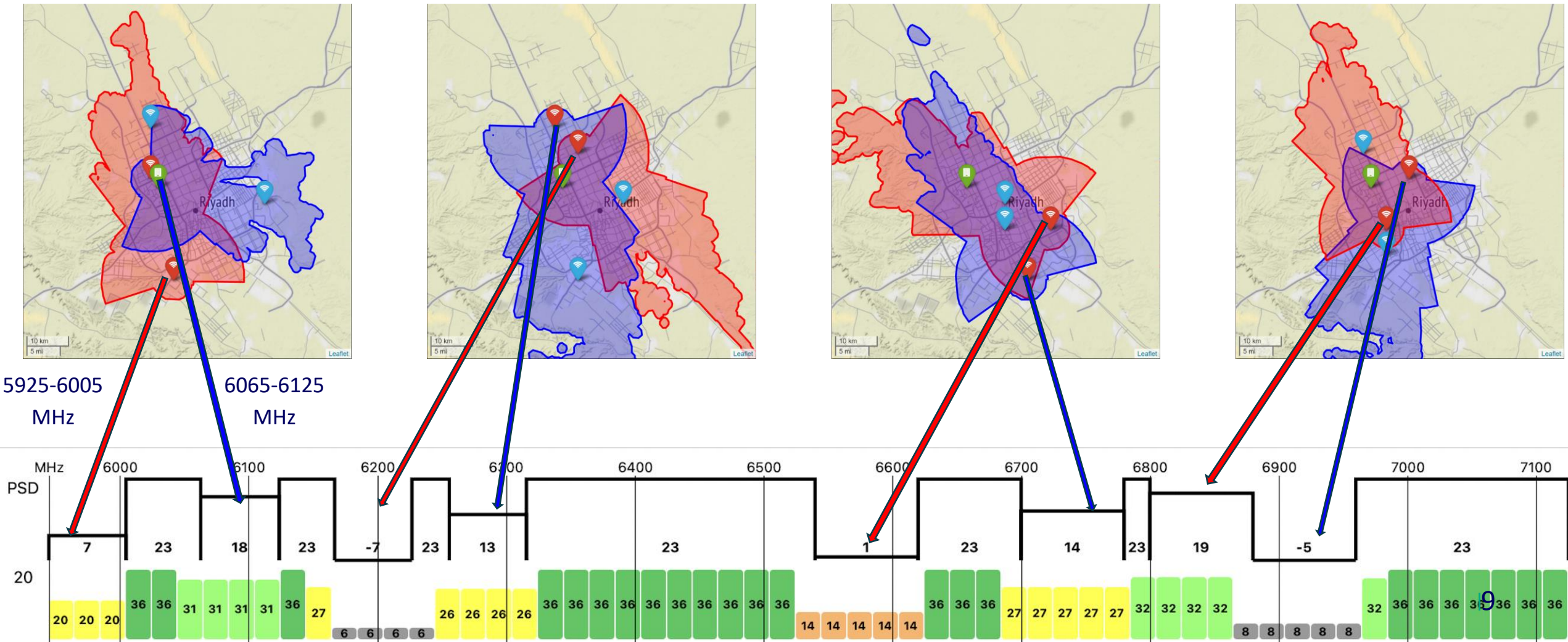
- One of largest makers of managed Wi-Fi equipment in the world
- Over 30 years history in the Kingdom
- Wi-Fi provider to pilgrims at Masjid al-Haram and many businesses such as Aramco, many universities including Umm Al Qura, stadiums and more
- Wi-Fi partner of Mobily & STC



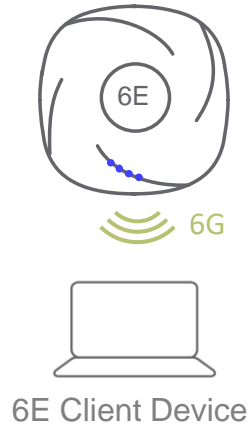
- World leader in automated dynamic spectrum management services
- More than 350 customers and 110,000 wireless devices under management
- Leveraging cloud-scale to meet explosive demand for wireless connectivity



- **8 FS Links Constrain Spectrum Availability at CITC Headquarters**
- **Each results in PSD and EIRP reduction in FS link operating frequency**

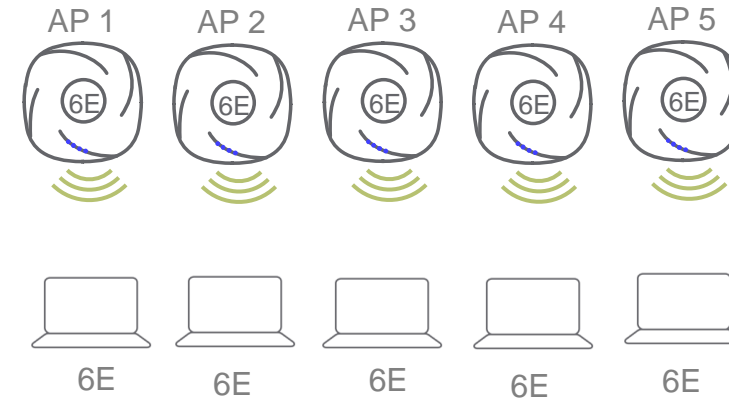


## Part 1



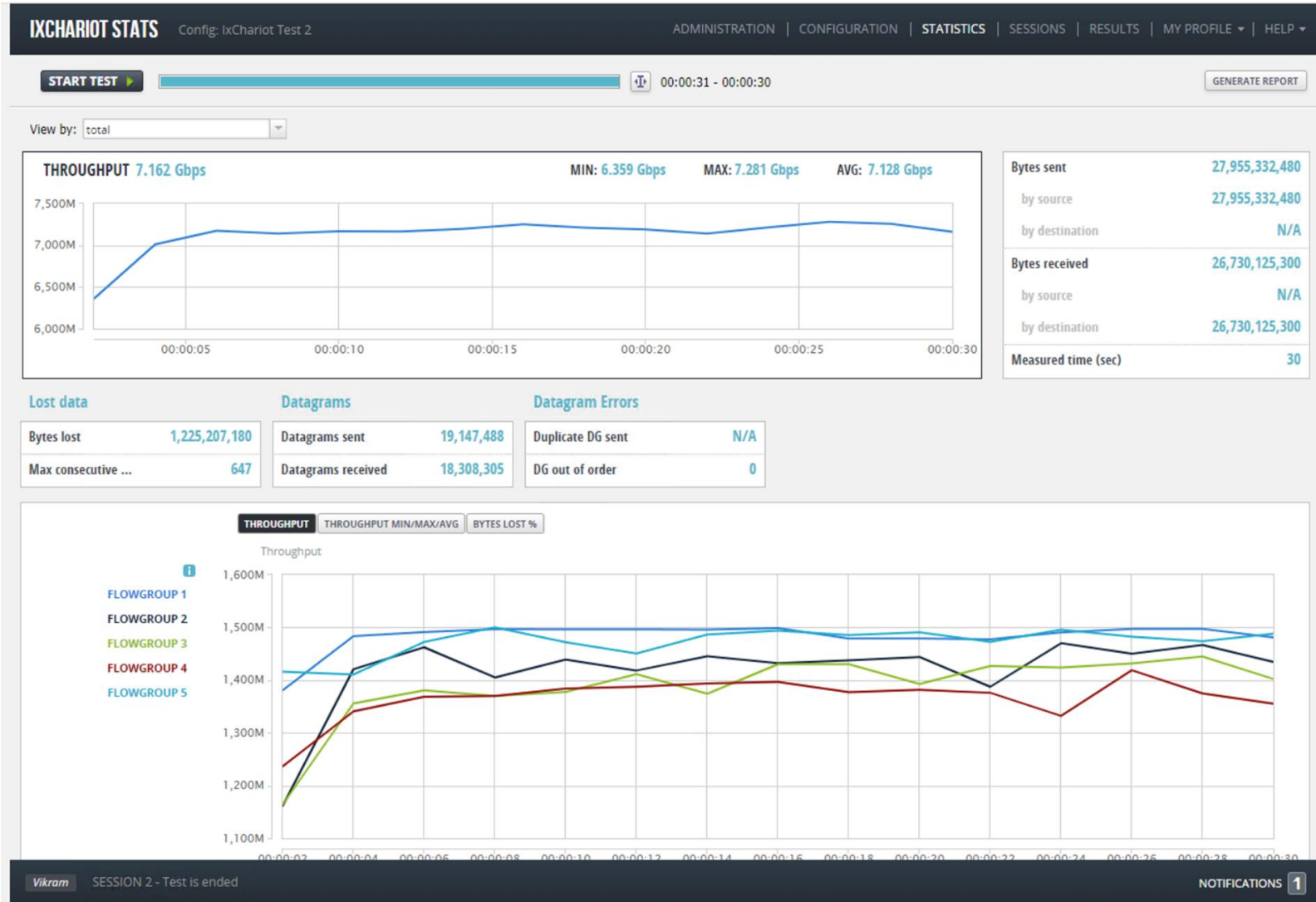
- **Gigabit** performance in **ultrawide** 160 MHz channel
- Under AFC control

## Part 2

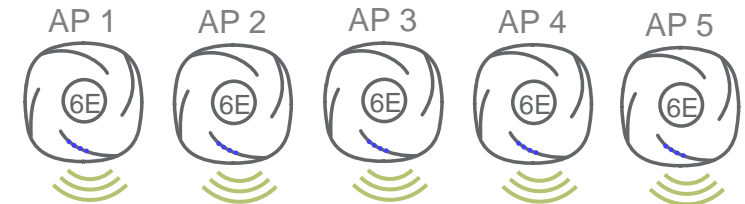


- **Multi-gigabit** performance with **simultaneous** 6E operation on multiple **ultrawide** channels
- Five APs and 5 client devices under AFC control

# Performance Results



**Nearly 1.5 Gbps**



**More than 7 Gbps**

### **CST previously stated its plan to open up the 4000-4200 MHz band to low-powered deployments for verticals using a light-licensing regime subject to restrictions that protect existing and new satellite deployments**

- The Kingdom is seeing increasing demand for access to spectrum for new, localized, wireless applications
- CST seeks to facilitate innovation and encourage investment in new wireless services while ensuring the protection of incumbent licensees by permitting access to the 4000-4200 MHz band.

Figures

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Place Holder:  
I am still working on the PPT  
Possible added topics:  
1- Spectrum trading  
2- possible light licensing bands



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