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ITURRS NADI 2022 ASIA-PACIFIC

Modern Spectrum Management and Monitoring Moderator/ keynote speech

Monday 19/12/22, Session 2, 1030 - 1200 (local time)

This presentation will be retrieved at ITU RRS Forum

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Theories and Policies

1. So begins Leo Tolstoy's Anna Karenina : ‘All happy families are alike; each unhappy family is unhappy in its own way’
2. Between two points in planar geometry there is only one simple line, but indefinite curves
3. 'Great minds think alike' (Michaelian)
4. ‘Stand on the shoulders of giants‘ (also I. Newton)
5. 'Okham’s Razor': ‘if you have to choose between competing theories, choose the simplest theory- it is most likely to be true’

Demand the duty with each one can perform

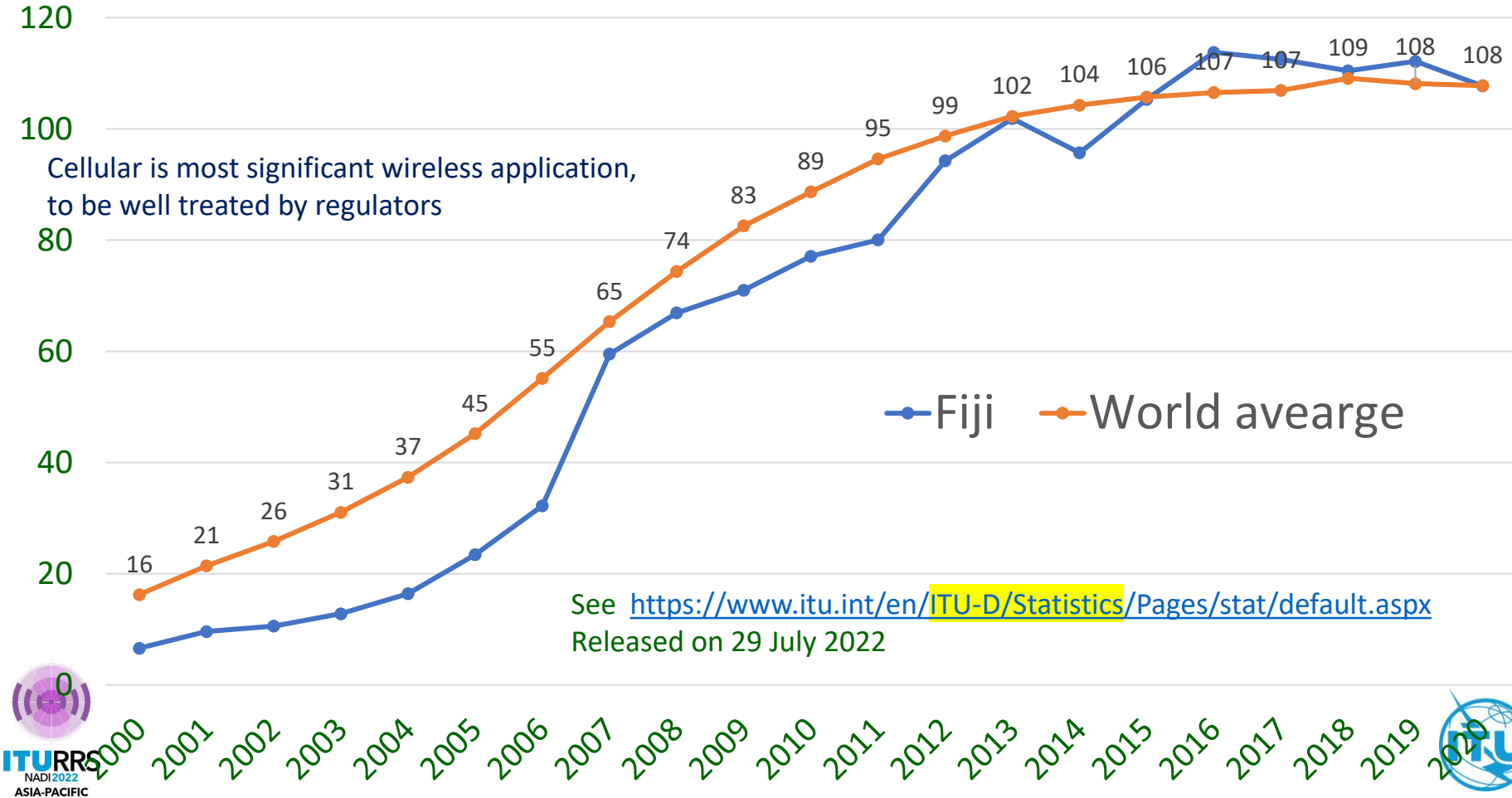
Antoine de Saint-Exupéry ‘Little Prince’

- “One must require from each one the duty with each one can perform" said the king
- "Accepted authority rests first of all on reason. If you ordered your people to go and throw themselves into the sea, they would rise up in revolution. I have the right to require obedience because my orders are reasonable”

Strategies: international, Regional and National

1. Follow RR Allocations
2. Reduce interference: lower-power, lower-altitude Above Sea Level, lower-altitude Above Ground Level
3. No discrimination; fairness, transparency & efficiency
4. Market-Dynamics: Intervene only when market-failure: lack of competition
5. Unused RF is a waste to economy: there is available RF: due to digital-dividends more RF than cellular competitors
6. For cellular efficient usage, consider to oblige active RF sharing
7. Efficient use of spectrum: assign spectrum to those that will generate the greatest socio-economic benefit from its use
8. Promote investment and innovation in the sector
9. New technologies improve b/Hz/second
10. Convergence of mobile, fixed, broadcasting and Internet services
11. Try not to allocate RF when the Transmitter & the Receiver are fixed
12. Put most attention on Short Range Devices

Mobile-cellular per 100 inhabitants, 2000-2021; world-average vs Fiji



See https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx
Released on 29 July 2022

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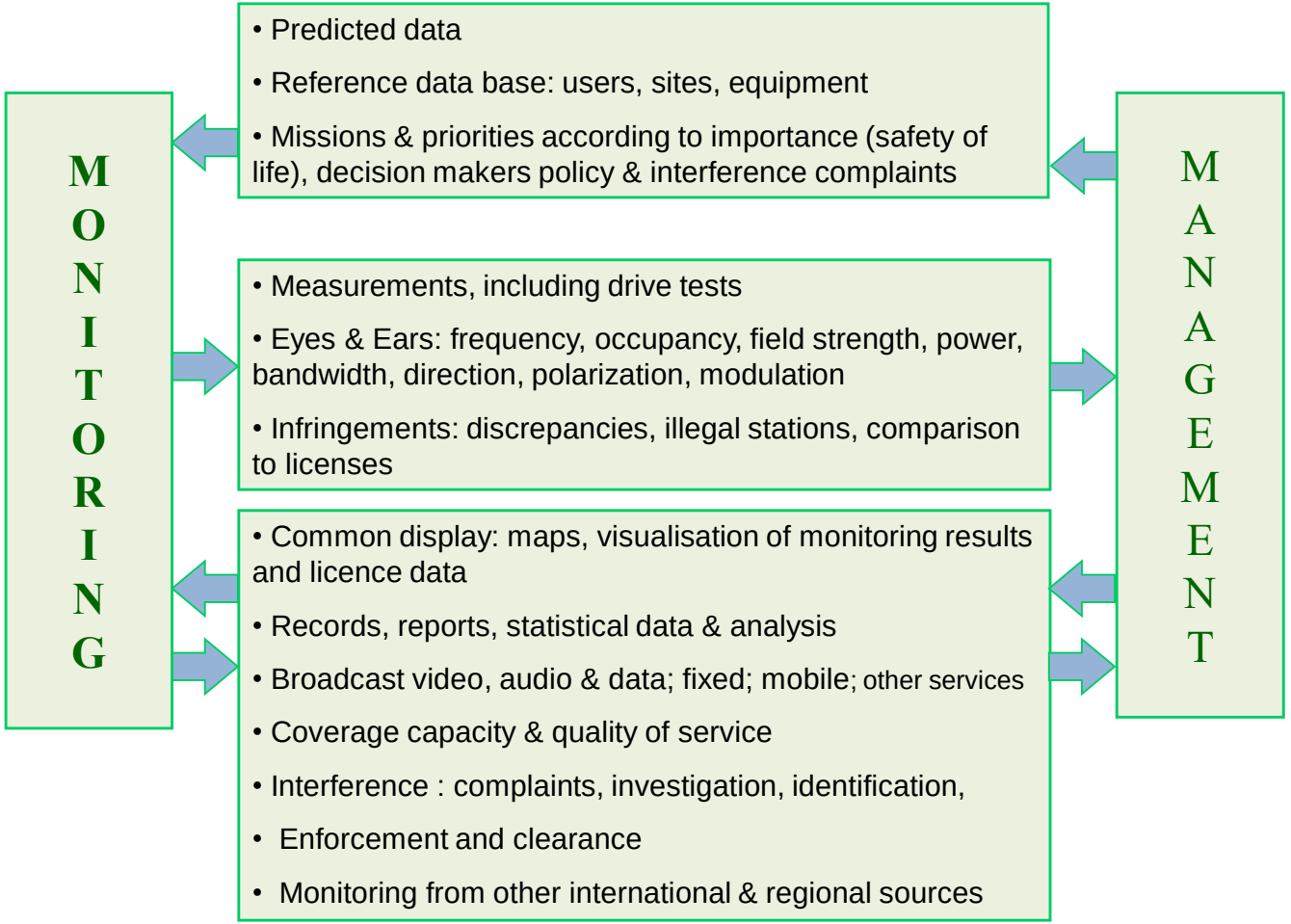
Where you sit is where you stand; auctions as example

1. Ministry or Agency- QoS, remote areas coverage, investments & better infrastructure
2. Ministry of Finance- highest revenue
3. Incumbent Operators may pay for more Spectrum
4. *Caveat Emptor* 'let the buyer beware': operators may monitor before buying
5. Other players?
6. Public interest: min. prices, max. coverage and capacity, including rural and remote areas, Public Protection and Disaster (Ocean floods an island) Relief (PPDR)
7. Administration should integrate all interests
8. Author's personal view:
    1. Beauty-test, as there is more supply than demand
    2. Realistic auctions minimum (reserve) price
    3. Realistic annual RF fees

Main Roles of National Spectrum Management

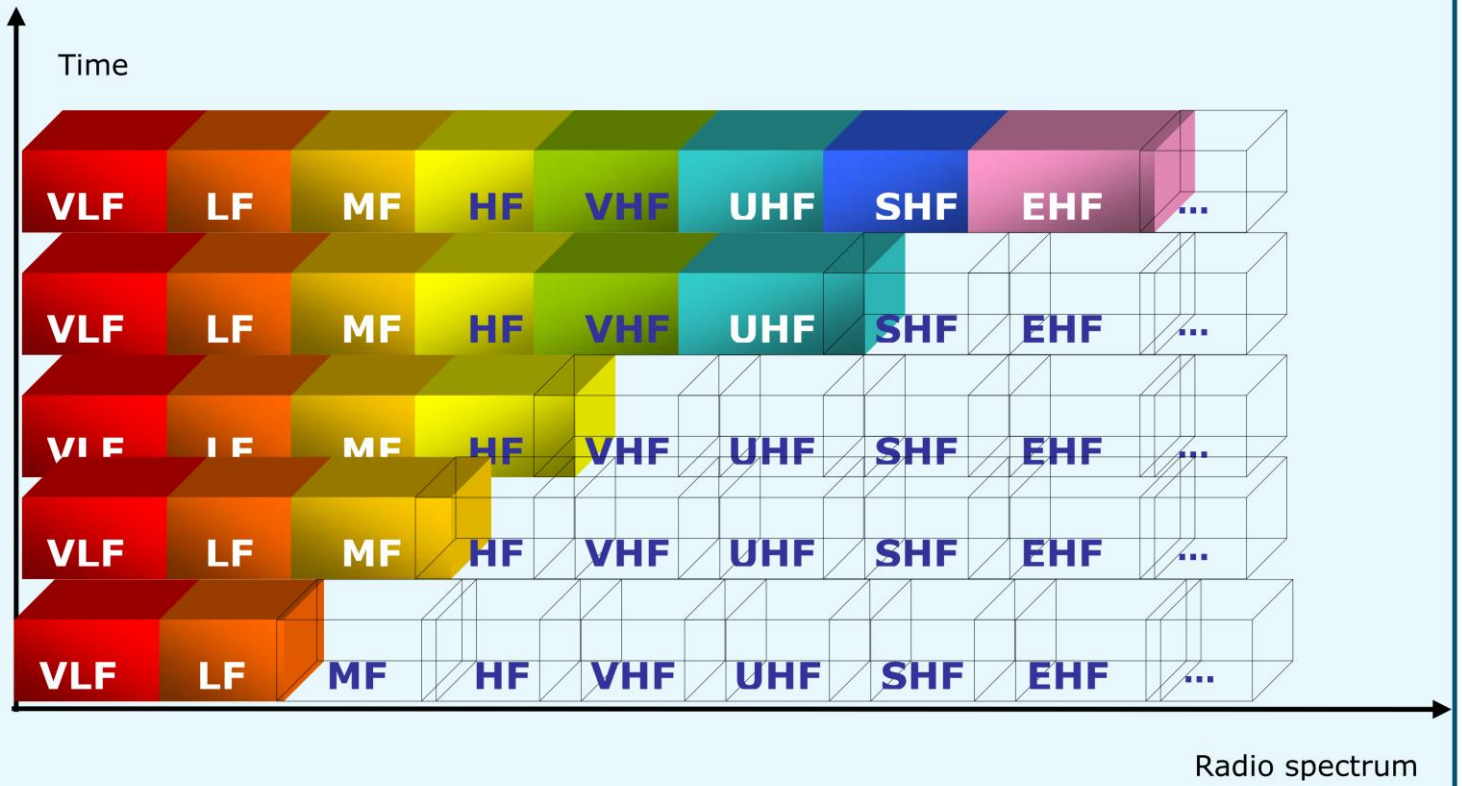
1. Avoid and solve interference
2. Design long and short term RF spectrum
3. Support Engineering: propagation, coverage…
4. Use APT Frequency Information System http://www.aptafis.org/; it is similar to European ECO Frequency Information System https://efis.cept.org/
5. Coordinate with other Administrations; like European Frequency Co-ordination Agreement European HCM-Agreement
6. Use the ITU tools developed for GE06 Agreement, for analogue to digital switch off
7. Coordinate with military wireless applications
8. Advance new wireless technologies (such as cognitive radios; digital audio and video)
9. Advance new technologies and efficient import
10. Serve your clients, the public: be transparent
11. Reduce RF human hazards

Interrelation of national spectrum management & monitoring functions; see Figure 1.3-1 Spectrum Monitoring HandBook



ITU-D Resolution 9 Final Report; 2014 Fig. 1

Scarcity of Radio Frequencies



Due to scarcity, greater capacities and smaller equipment, new applications operate at higher bands