



**Subregional Telecommunication Ministerial  
Forum for Cambodia, Lao PDR,  
Myanmar and Vietnam**

**Nha Trang, VietNam, 11-12 December 2009**

**Spectrum Management  
in Viet Nam**

**Le Van TUAN,  
Director of Radio Frequency Policy &  
Planning, RFD, MIC**

# Agenda

- Spectrum management responsibility
- Legislation, spectrum plan & refarming
- Frequency Assignment & Licensing
- International Activities

# VIET NAM ICT SECTOR

## Fixed



## Mobile



## MVNO

Indochina  
Telecom Jsc

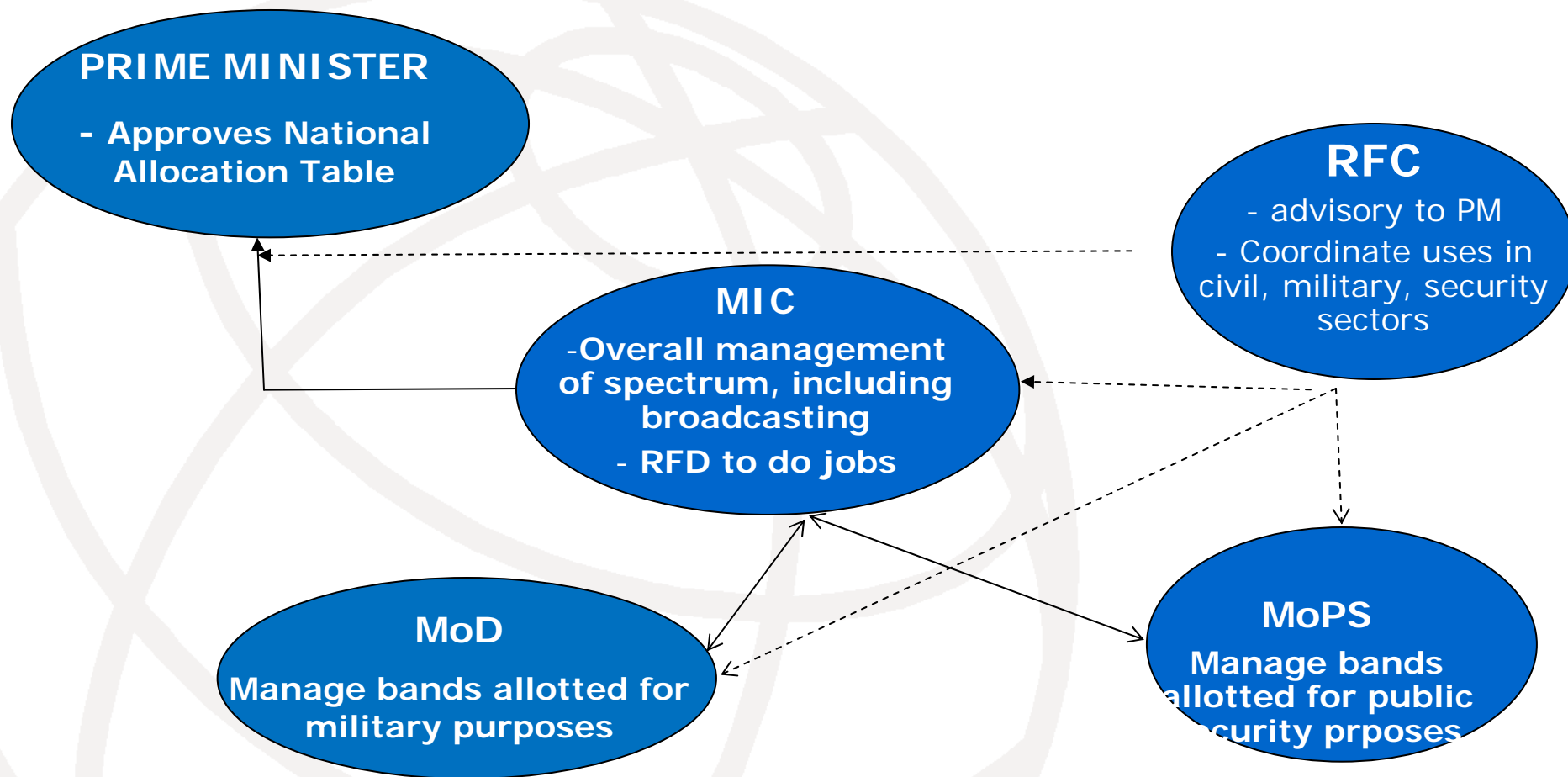
New applications  
received

## BROADCASTERS



63 provincial broadcasters

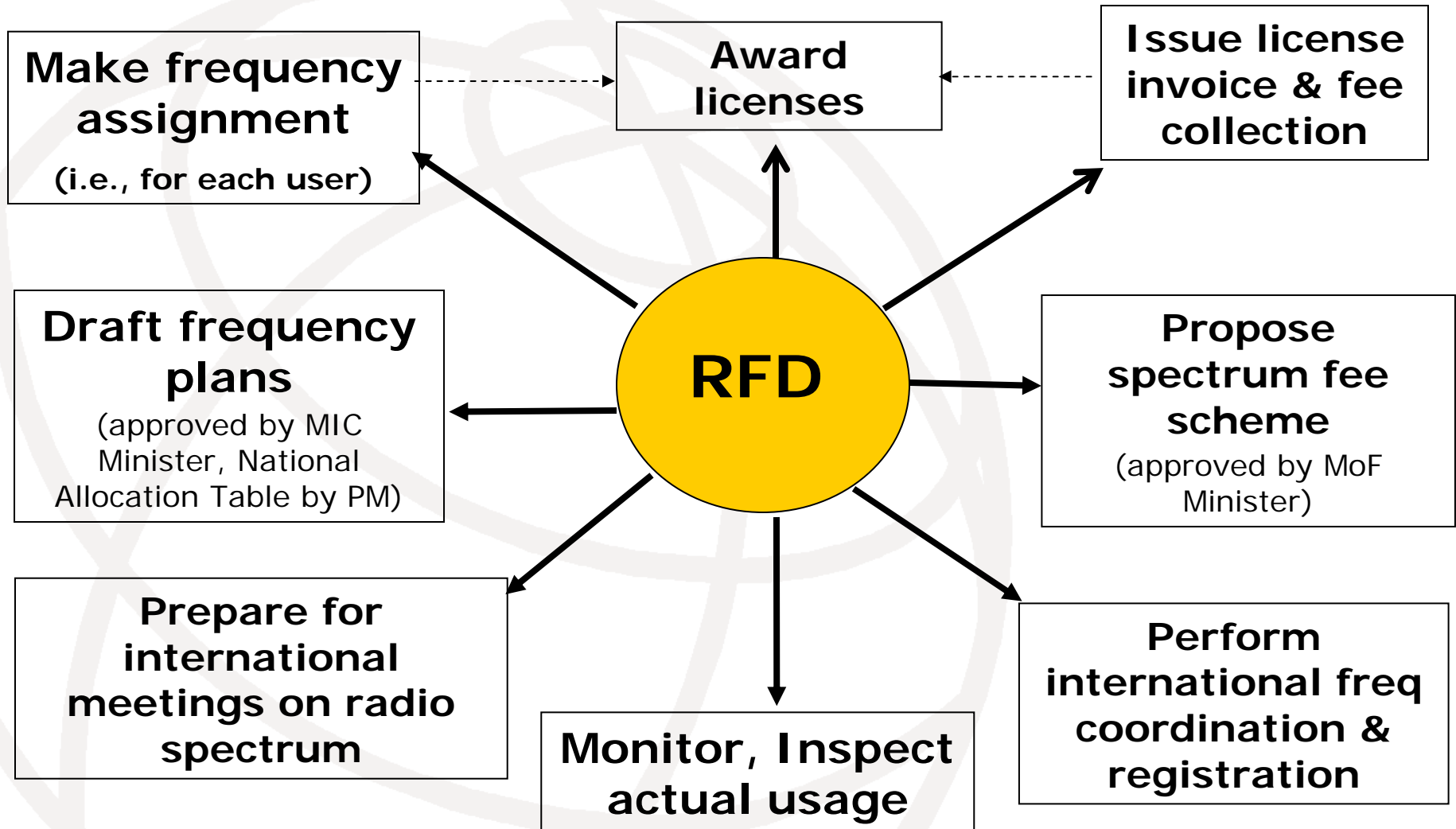
# Who Manage the Spectrum?



We believe the spectrum management should not be divided

# Who Manage the Spectrum?

## RFD's responsibilities



# Who Manage EMC, EMF?

EMC

MIC: radio ICT equipments  
MoST: other electronic- electric equipments

EMF

MIC

# What Are Our Legislations?

Radio Frequency Law  
(just approved on 23 Nov 09)

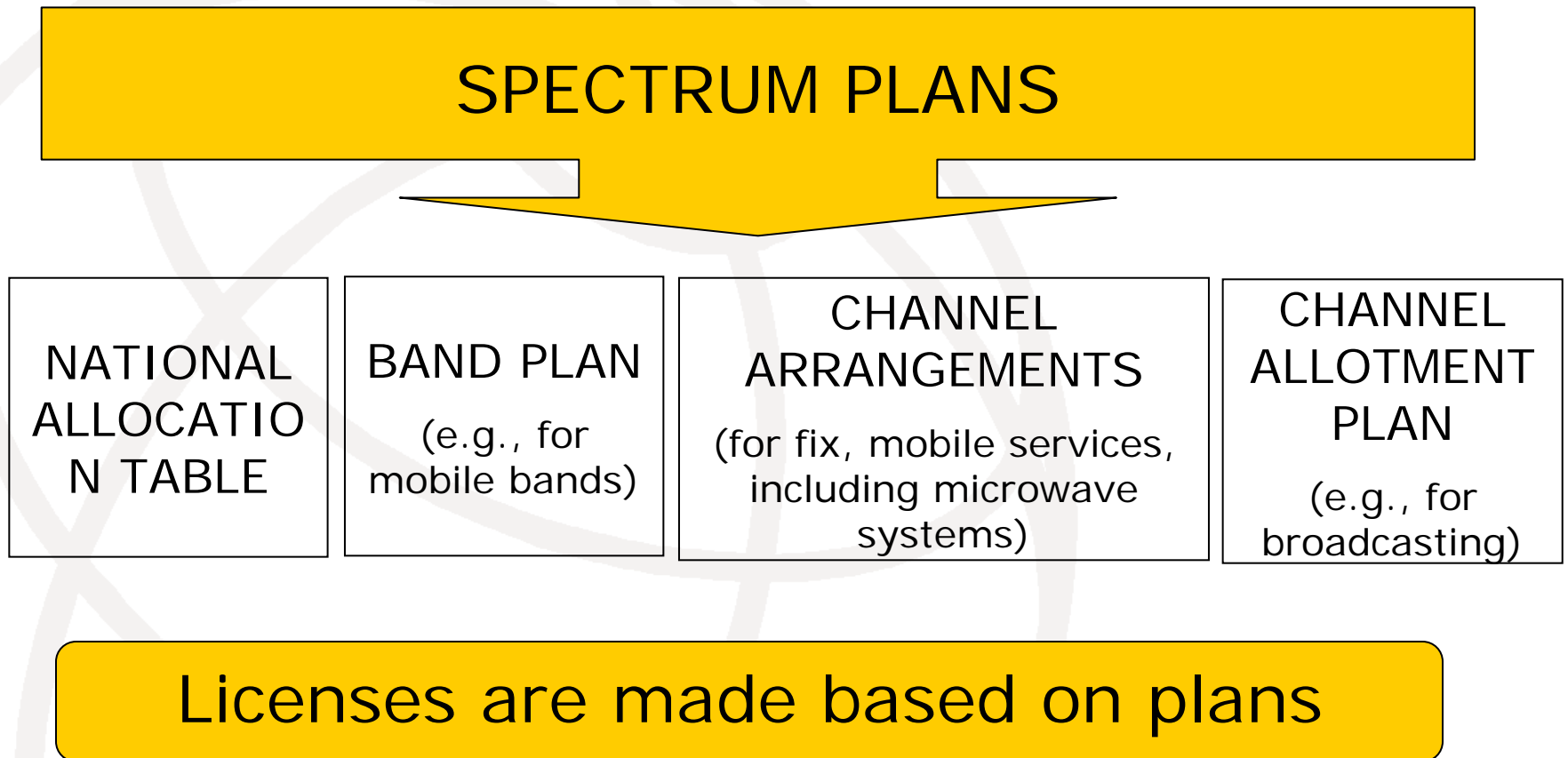
National Allocation Table  
(revised version approved on 23 Oct 09,  
reflecting WRC-07)

Radio Frequency plans  
(band plan, channel allotment plan, channel  
arrangements)

Technical regulations  
(Technical standards; regulations on SRD, on  
amateur, ect)

Separate law  
to make  
detail &  
specific  
provisions for  
management

# How Do We Make Spectrum Plan?



# NATIONAL ALLOCATION TABLE

Frequency (MHz)	Region 3	VietNam
1427-1429	FIXED MOBILE except aeronautical mobile SPACE OPERATION (Earth-to-space) 5.341	FIXED Mobile except aeronautical mobile Space operation (Earth-to-space) 5.341
1429-1452	FIXED MOBILE 5.343 5.339A 5.341	FIXED Mobile 5.339A 5.341
1452-1492	FIXED BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.347A MOBILE 5.343 5.341 5.344	FIXED BROADCASTING 5.345 BROADCASTING-SATELLITE 5.345 5.347A Mobile 5.341
1492-1518	FIXED MOBILE 5.341	FIXED Mobile 5.341
1518-1525	FIXED MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.348C MOBILE 5.341	FIXED MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.348C Mobile 5.341
1525-1530	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A Earth exploration-satellite Mobile 5.349 5.341 5.351 5.352A 5.354	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A Earth exploration-satellite Mobile 5.341 5.351 5.352A 5.354
1530-1535	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.341 5.351 5.354

Follow allcations for  
Region 3 in RR,  
including its footnotes



Updated following WRC  
decisions

Specific country  
footnotes gorvening  
some specific bands

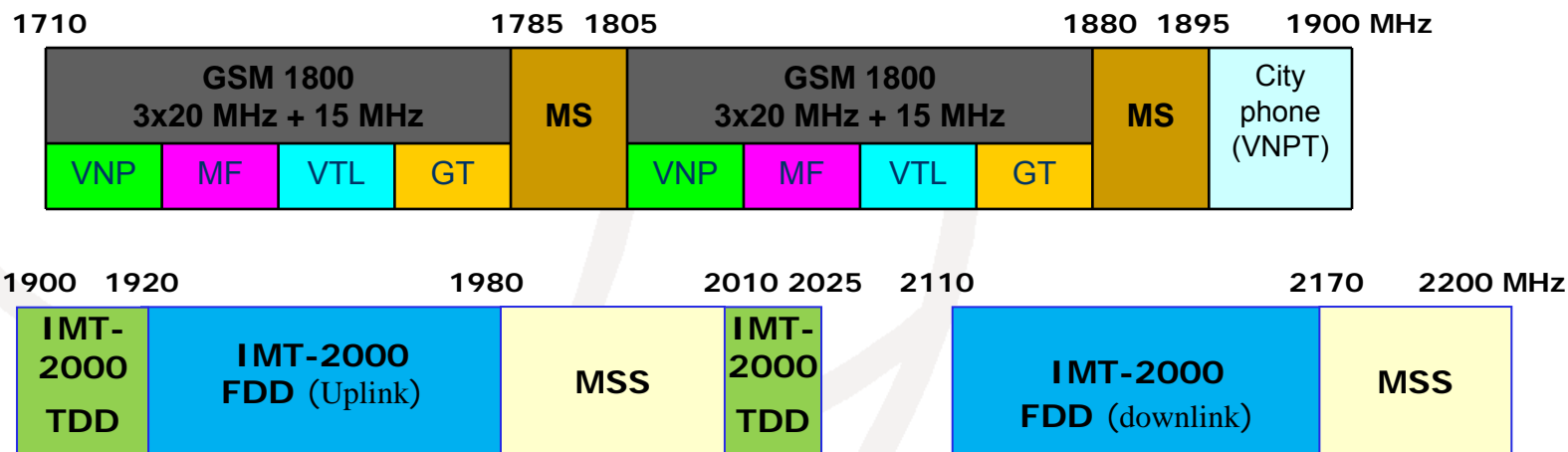
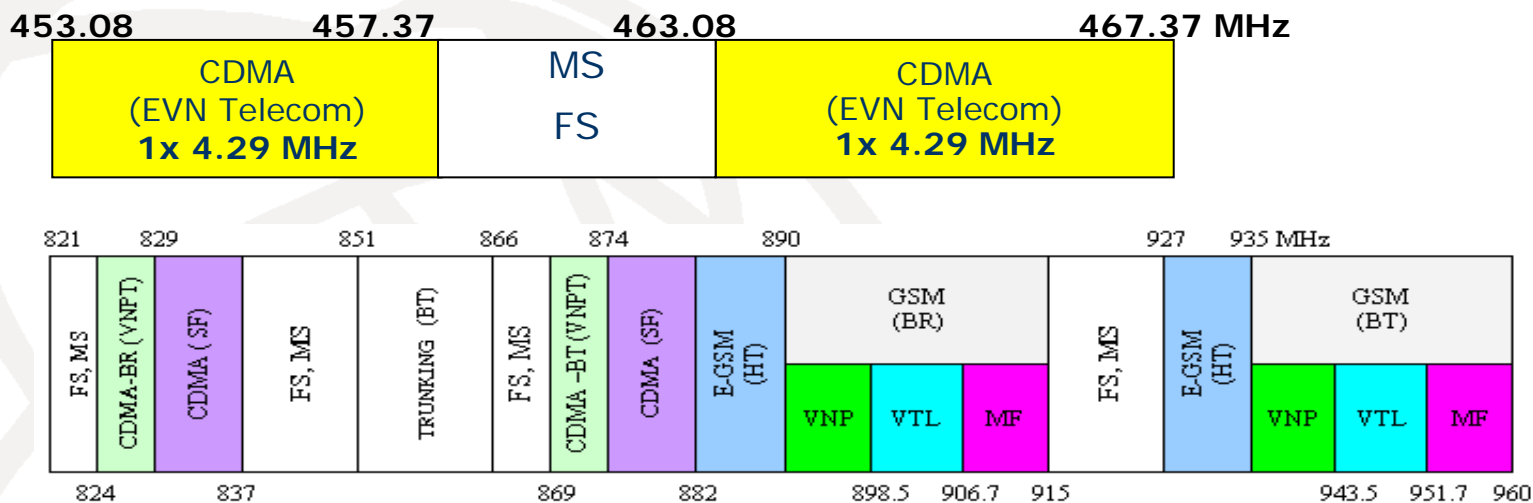


Guide for refarming

# BAND PLAN

Made for specific bands & specific technologies or systems

Define: block sizes, guard bands, reform deadline



# TV Channel Allotment Plan

Order number	Province	Transmitter location	TV Programme									
			VTV1		VTV2		VTV3		Regional & DVB-T		Province	
			Channel No	Power (KW)	Channel No	Power (KW)	Channel No	Power (KW)	Channel No	Power (KW)	Channel No	Power (KW)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Ha Giang	Ha Giang town	8	2	23	5	11	2			6	2
2	Lao Cai	Lao Cai town	12	2	23	5	6	2			9	2
3	Cao Bang	Cao Bang town	8	2	6	2	23	5			11	2
4	Lai Chau	Dien Bien city	7	2	23	5	12	2			9	2
		Lai Chau town	25	5	29	5	27	5			22	5
5	Tuyen Quang	Tuyen Quang town			34	5	31	5			8	2

# TV DIGITALIZATION

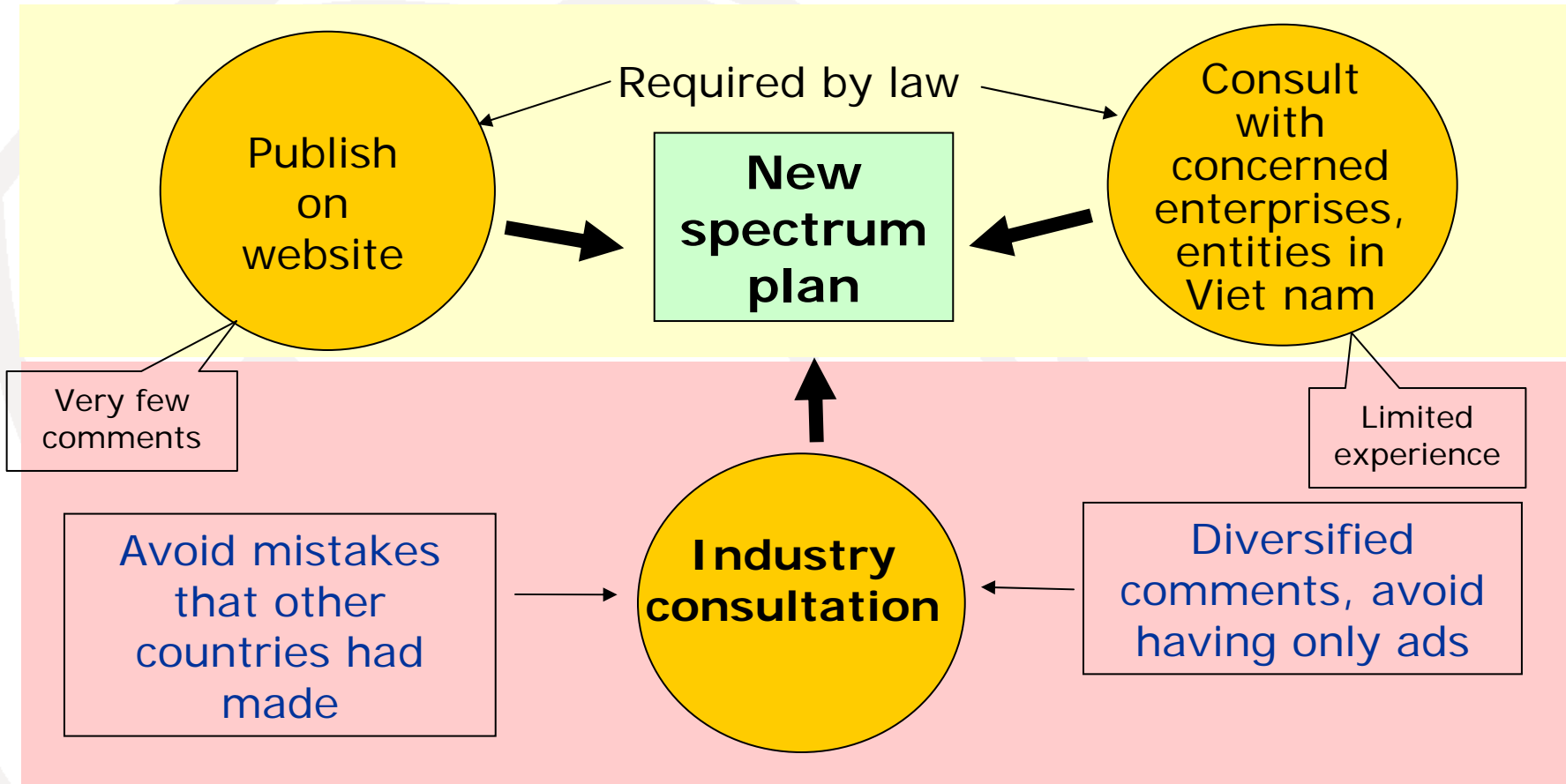
- Targeted completion:
  - Big cities: 2015
  - Whole country: 2020

- Establish broadcasting transmission facility market:
  - 7 to 8 operators/broadcasters, 2 to 3 nationwide
  - Small broadcasters shall hire transmission facility

- Freed spectrum for other services:
  - Digital dividend
  - Stop MMDS system in 2.5 GHz before 2010

2  
0  
2  
0

# Improvement of Consultation



## CHALLENGES & ACTIONS NEEDED

Provide more spectrum for Mobile Broadband (UHF, 2.3, 2.5 GHz bands)

Facilitate Use of FWA for Backhauling

SRDs will be more important, so needs improved regulation

# Who Do We Perform Refarming?

ALERT existing licensees

LIMIT or Prohibit new deployment or expansion in a freq. plan

DEFINE a deadline for termination of operation

WANT to use band earlier than deadline, pay compensation

## Example 1: 2.1 GHz band

- 1996: alerting microwave licensees
- 2000: no new microwave deployment in the band
- 2009: award 3G licenses

## Example 2: 2.6 GHz band

- 2000: limit new deployment of MMDS & microwave systems
- 2009: existing systems be ceased before 2010.

WRC result is important to prepare for refarming

Radio Frequency Law:

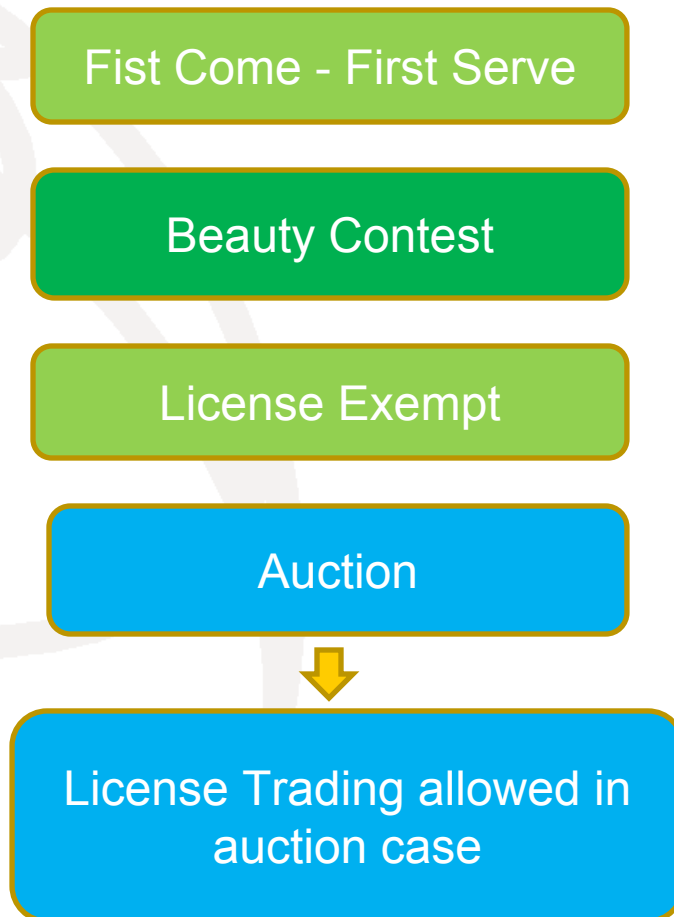
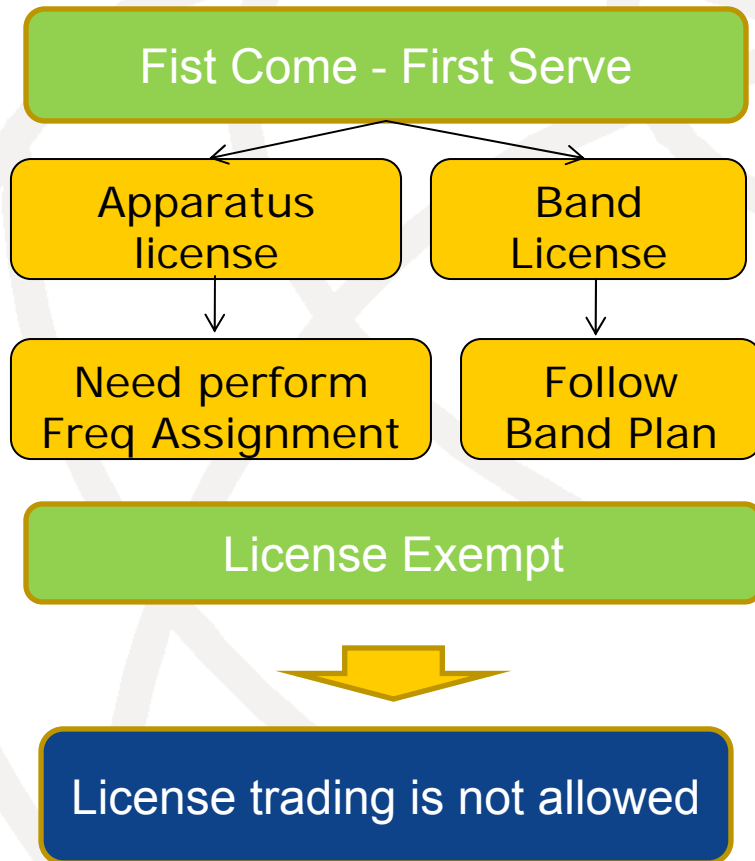
Revoke valid licenses → Compensation

Detail Regulations to be developed

# How Do We Perform Licensing?

Now

As of Jul 2010



# Making Frequency Assignment Using Ellipse Software

Database administration tools

Interference Assessment  
tool for assignment purpose

The screenshot displays the Ellipse 7.0.9 software interface, which is used for frequency assignment and interference assessment. The main window is titled "ELLIPSE 7.0.9 - [Elements Link - MODIF]" and features a menu bar with options like Technical, Administrative, User, Authorisation, Invoicing, Monitoring, Libraries, Tools, and Quit. The interface is divided into several panels:

- General Panel:** Contains fields for Tip 1 description, Tip 1 reference (VINA\_SQLQ2-KCN BIEN HOA), Site reference (VINA\_TRUONG SQLQ2), Type (MW Station), Network reference (7.4-7.7GHZ), Step length (Km) (13.56), Tip 2 description, Tip 2 reference (VINA\_KCN BIEN HOA-SQLQ2), Site reference (VINA\_KCN BIEN HOA), Type (MW Station), Network reference (7.4-7.7GHZ), and Link name (10003\_FH\_0).
- Technical Panel:** Shows a list of frequency channels (e.g., 18334\_FH\_0, 18335\_FH\_0, etc.) and a graph of the frequency spectrum.
- Interference Assessment Panel:** Displays a map with a complex network of blue and yellow lines representing signal paths and interference levels. A detailed analysis window for "18334\_FH\_0 analysis" is open, showing parameters such as Site, Altitude, Station, Antenna, Height, Tilt, Azimuth, Equipment, EIRP, Calc. Freq., Polarisation, Path, Pathloss, Absorption, Threshold, Field level, Th. margin, Eff. margin, Rain Unavail., and Tot. Unavail.

Param	Value	Unit
Site	HTC333025	HTC333042
Altitude	0 + 0 m	0 + 0 m
Station	HTC333035.333042	HTC333042.33
Antenna	MW-7.5G-1.2M	MW-7.5G-1.2M
Height	50.0 / 200.0 m	50.0 / 200.0 m
Tilt	-0.1	0.1
Azimuth prot.	116.7	286.7
Azimuth real	116.7	286.8
Equipment	DefaultFH	DefaultFH
EIRP	25.70 dBW	25.70 dBW
Calc. Freq.	7.184000 GHz	7.345000 GHz
Polarisation	Vertical	Vertical
Path	B->A	A->B
Pathloss	139.3843 dB	139.1918 dB
Absorption	0.5555 dB	0.5027 dB
Threshold	-114.00 dBW	-114.00 dBW
Field level	-78.04 dBW	-77.79 dBW
Th. margin	35.96 dB	36.20 dB
Eff. margin	35.95 dB	36.19 dB
Rain Unavail.	0.000000	0.000000
MP Unavail.	0.000062	0.000058
Tot. Unavail.	0.032026	0.032023

# 3G BEAUTY CONTEST

Completed and 4 license were awarded on 15<sup>th</sup> Sept 09

Main requirements:

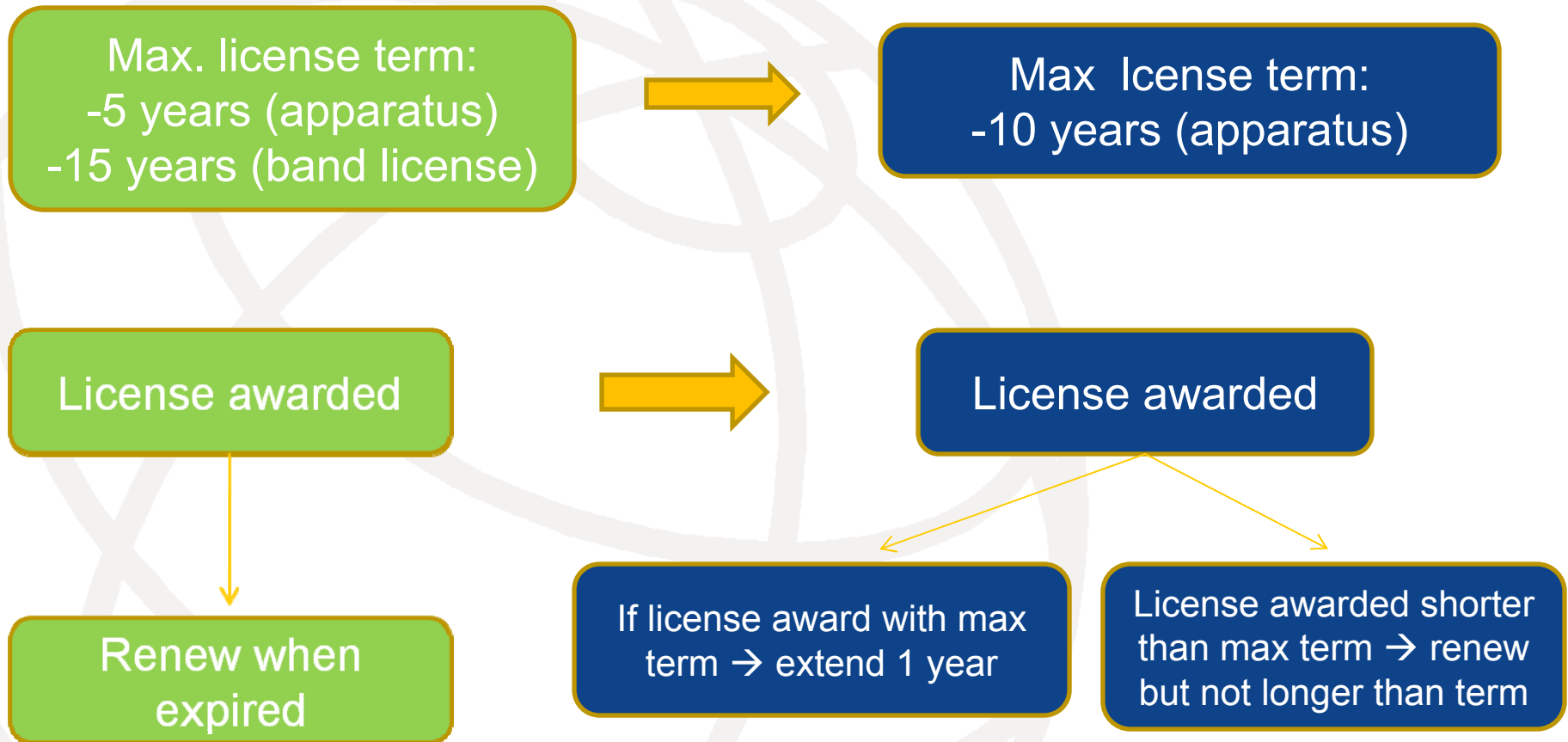
- WCDMA or HSPA technologies
- Coverage  $\geq$  10% population at service launching and  $\geq$  20% after 3 years
- Investment within 3 initial years  $\geq$  2800 billion VND (160 mUSD)
- Financial deposit  $\geq$  5% committed investment within 3 initial years
- Time for service launching  $\leq$ 24 months

Valuation (1000 points ):

- 300 points for financial deposit (investment commitment)
- 300 points for coverage commitment
- 200 points for facility sharing between 2G and 3G
- 100 points for service launching time
- 100 points for accuracy and reasonableness of bidding documents

Like an  
auction!

# License Term, Renewal & Extension



# License Revocation

No real use within :  
- 1yr for band license  
- 6 months for  
apparatus license

Usage is not efficient or  
not conform with  
purpose

Violate license conditions  
resulting in damage to other

Intentional causing harmful  
interference to other

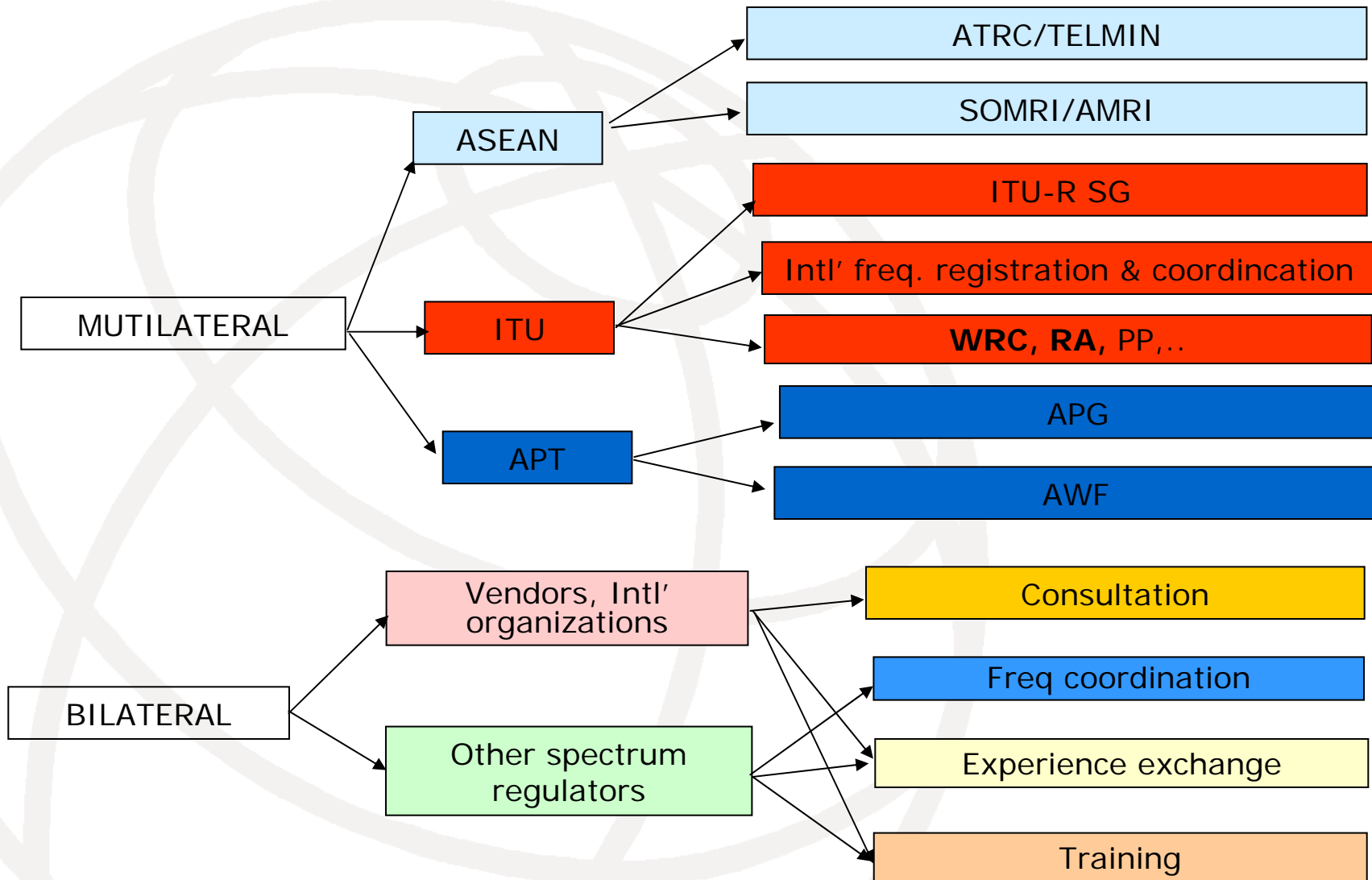
Intentional providing fake  
information to get license

False to satisfy financial  
obligations (i.e., spectrum charge)

No real usage within 2 yrs

License only awarded 1 yr later

# RFD's INTL' ACTIVITIES



# Cooperation Within ASEAN

No specific forum dedicated to spectrum issue at ASEAN level

Cooperations exist at bilateral or group

CLMV should strengthen collaboration



# Thank you!

Contact: Mr. Le Van Tuan  
tuanlv@nd.gov.vn