



# Regionalization in **DVB-T2** with network delivery optimization

Nairobi, May 27th 2014

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# Key features of the DVB-T2 standard

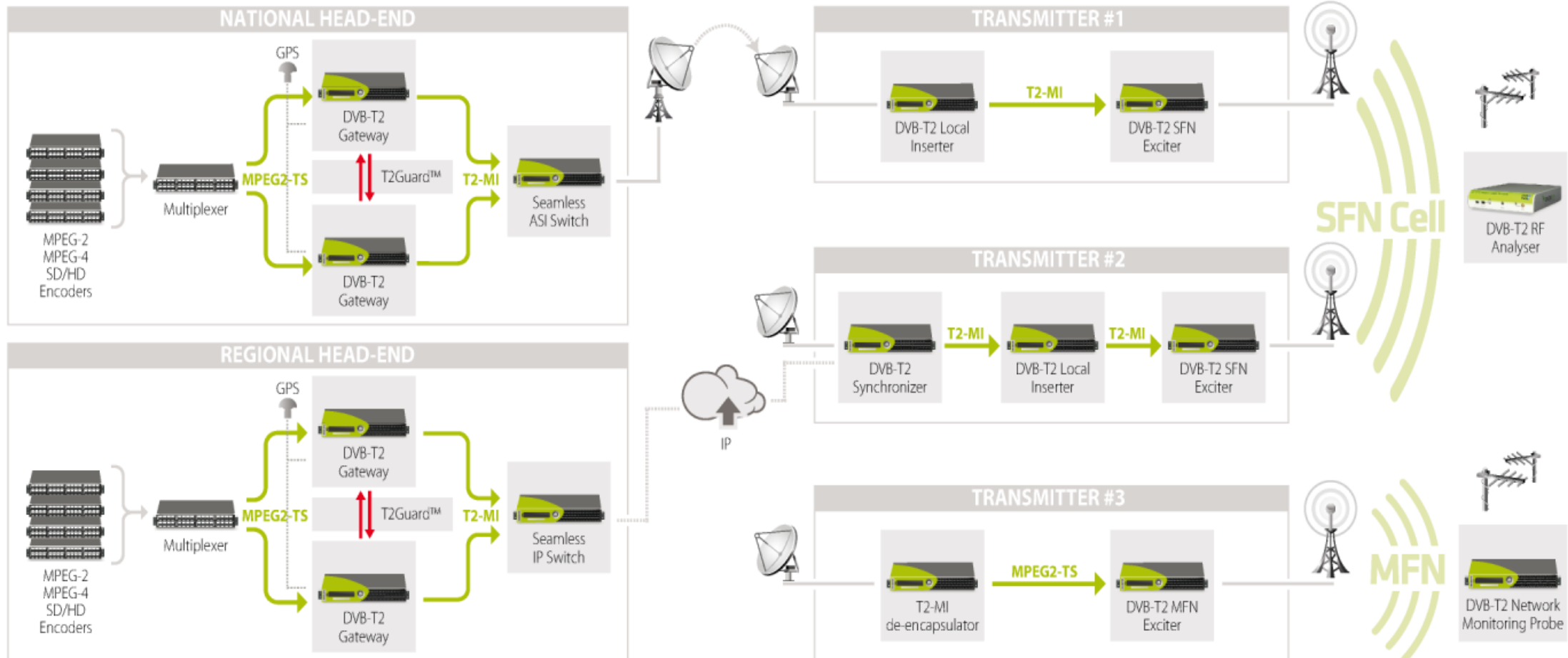
- **DVB-T2: standard of the future**
- **Key words for your DVB-T2 network:**
  - SFN: Single Frequency Network
    - *Technology to optimize your Frequency Allocation Plan*
  - MPLP: Multiple Physical Layer Pipes
    - *The Added Value of your network*
  - T2-MI: DVB-T2 Modulator Interface
    - *Protocol to manage your network, including SFN & Multi-PLP*

**DVB-T2**<sup>®</sup>



## • DVB-T2: Typical Architecture

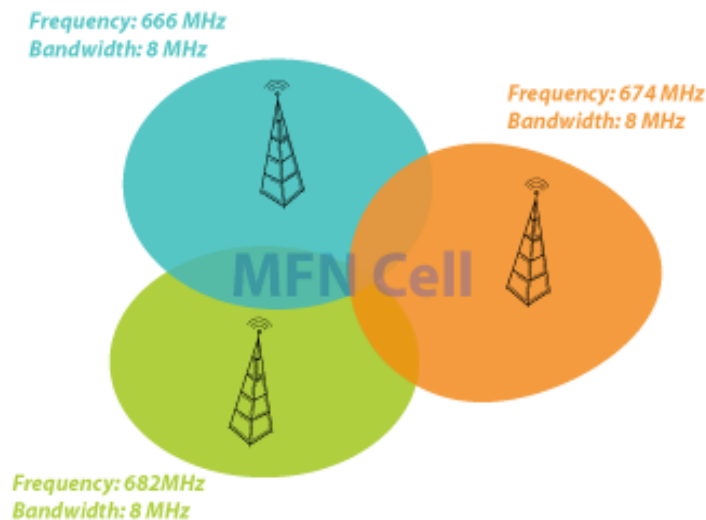
**DVB-T2**<sup>®</sup>



# SFN = Single Frequency Network

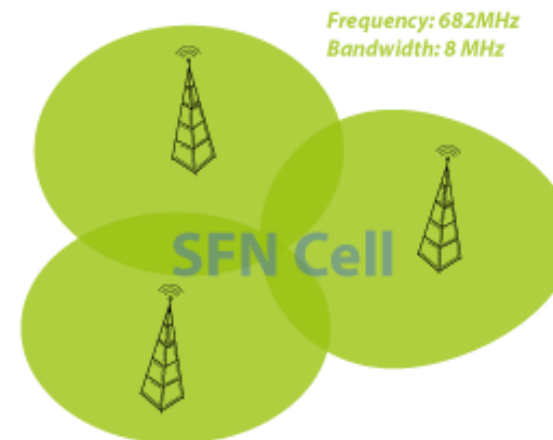
## MFN : Multiple Frequency Network

- for the broadcast of same content with overlap zones: Different frequencies allocated
- Used spectrum:  $3 \times 8\text{MHz} = 24\text{ MHz}$



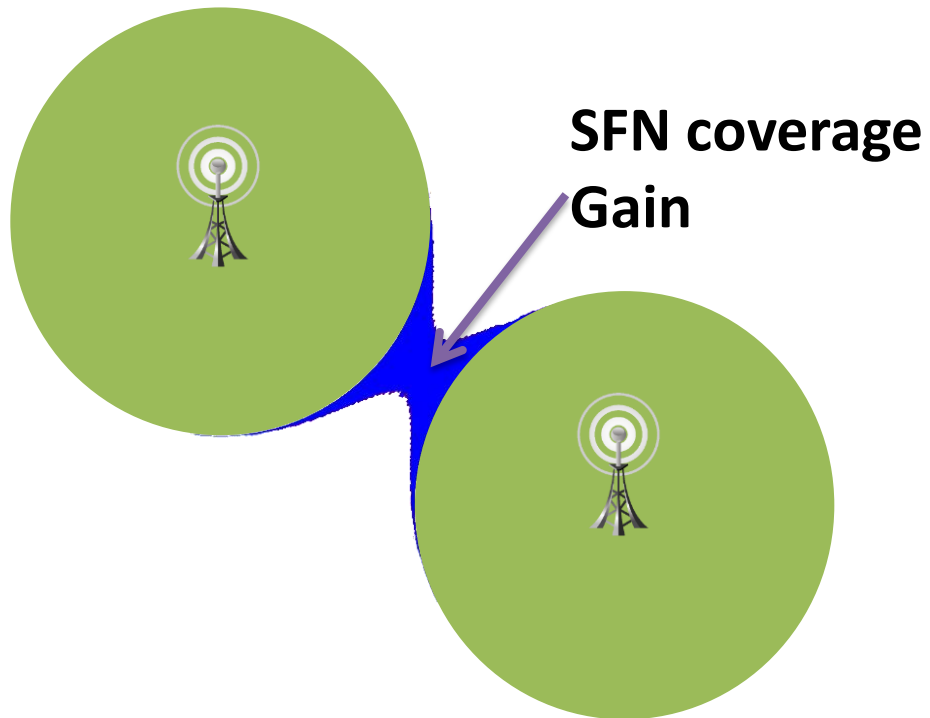
## SFN : Single Frequency Network

- for the broadcast of same content with overlap zones: Only 1 Frequency used
- Used spectrum:  $1 \times 8\text{MHz} = 8\text{ MHz}$



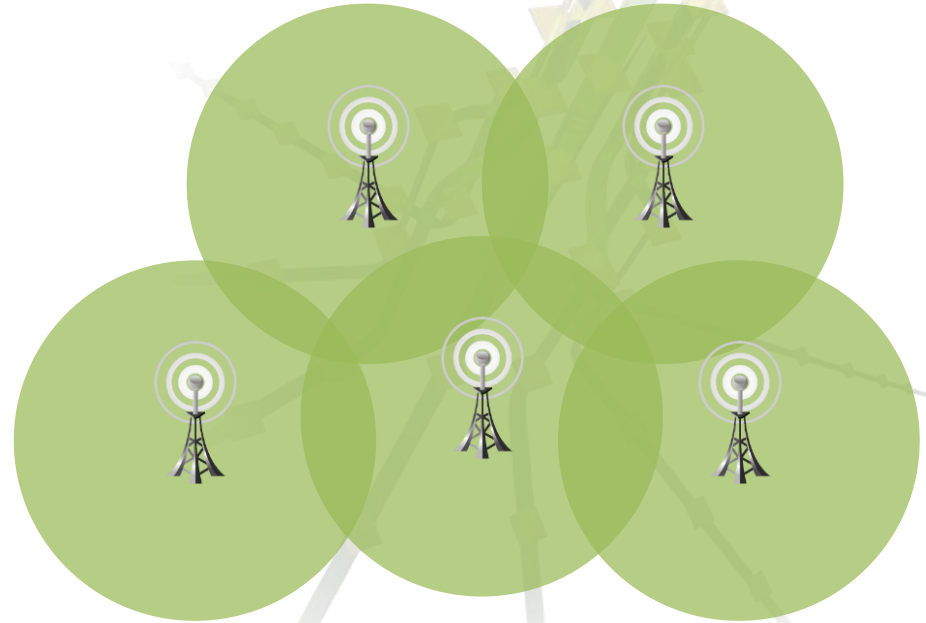
➡ Same content, at the Same time, with the Same frequency

## Better coverage of overlap zones



## Optimization of Frequency Allocation Plan :

- Only 1 broadcast authorization required
- Future proof for network extension



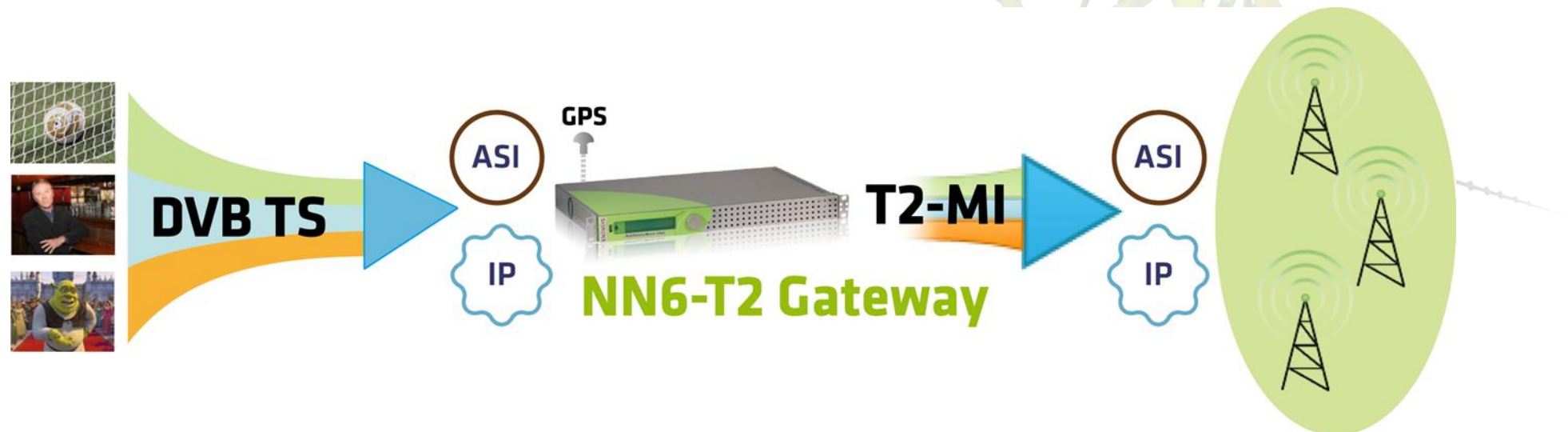
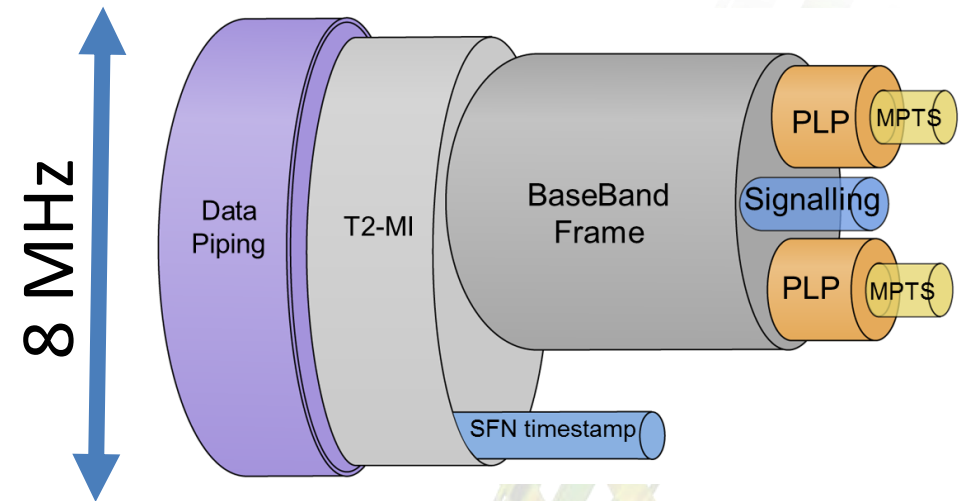
- **Additional Benefits of SFN:**

- Low impact on cross countries neighbours





- **Multi-PLP : Multiple Physical Layer Pipes**
  - Possibility to divide 1 Mux into « sub-Muxes »
- **The T2Gateway manages the Multi-PLP & SFN**



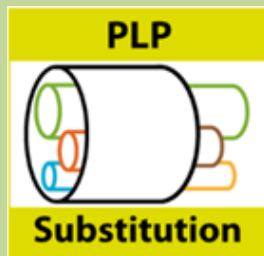
- **Flexibility, thanks to Multi-PLP, allows new Business Models:**



**Multiplex Sharing**



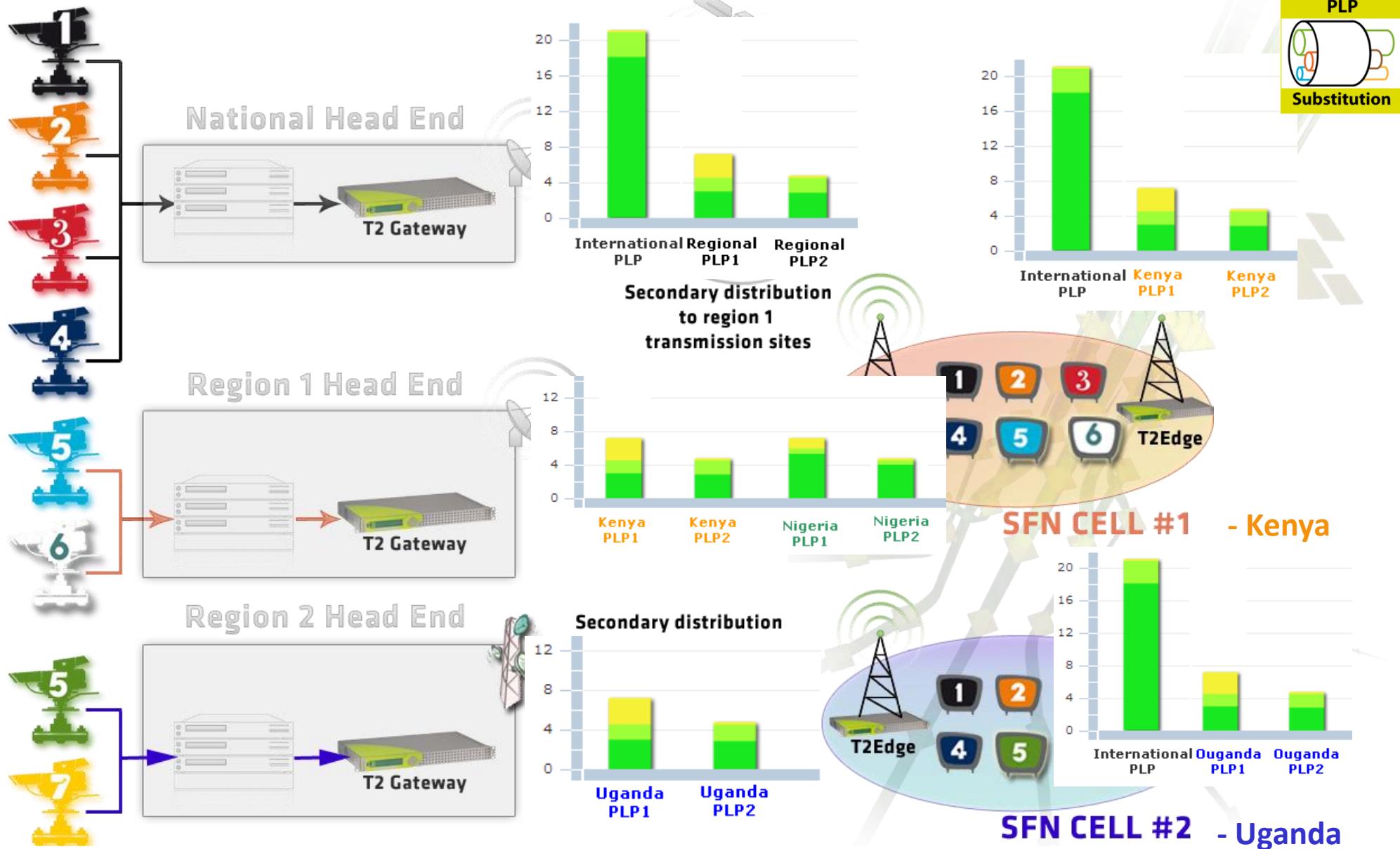
**Combination of TV & Mobiles Services**



**Regional Content Management, in SFN**



# Regional Content insertion with T2Edge



## The DTT success in Africa

Multichoice roll-outs GOtv, a pan-Africa DVB-T2 SFN network over 15 countries

GOtv signal is distributing by satellite for each country, in which it is broadcasted by DVB-T2 transmitters

Each country broadcast PayTV services with International content as well as **regional** content, specific to the country

Thanks to the PLP replacement technology, cost savings over 200MBps of satellite capacity

# SFN + Multi-PLP = **DVB-T2** ultimate solution



100% Standard

Reliable: already deployed and running over the 4 continents

No additional costs

Optimization of Bandwidth

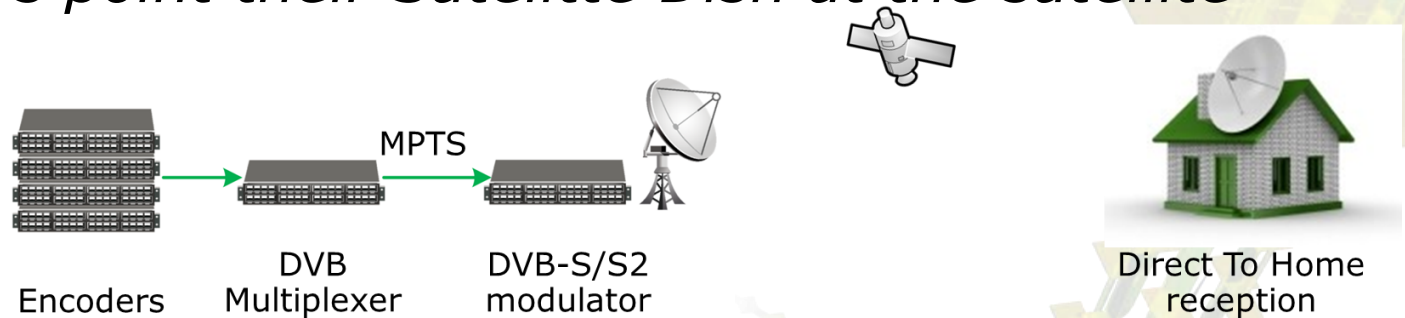
Flexibility: allows new Business Models

# Combination of DVB-T2 and DTH services

- **2 use cases for Digital TV broadcast over Satellite :**

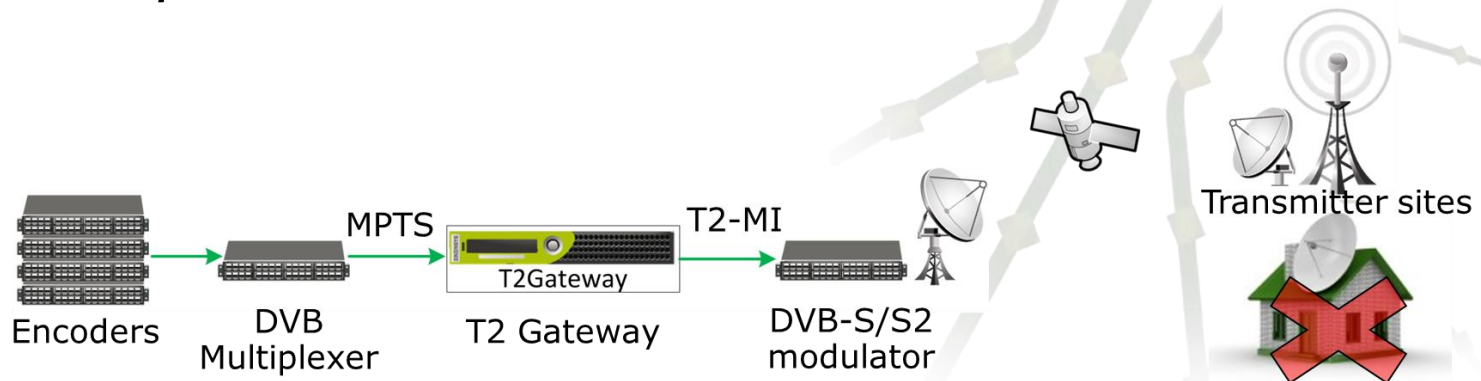
- « Direct To Home » DTH

- *Customers point their Satellite Dish at the satellite*



- Primary Distribution to the transmitters

- *Customers point their roof antenna at the nearest transmitter*







## ↘ DO YOU REALLY NEED TWO?

Use a **Single** satellite  
feed for DTH delivery  
and DTT distribution

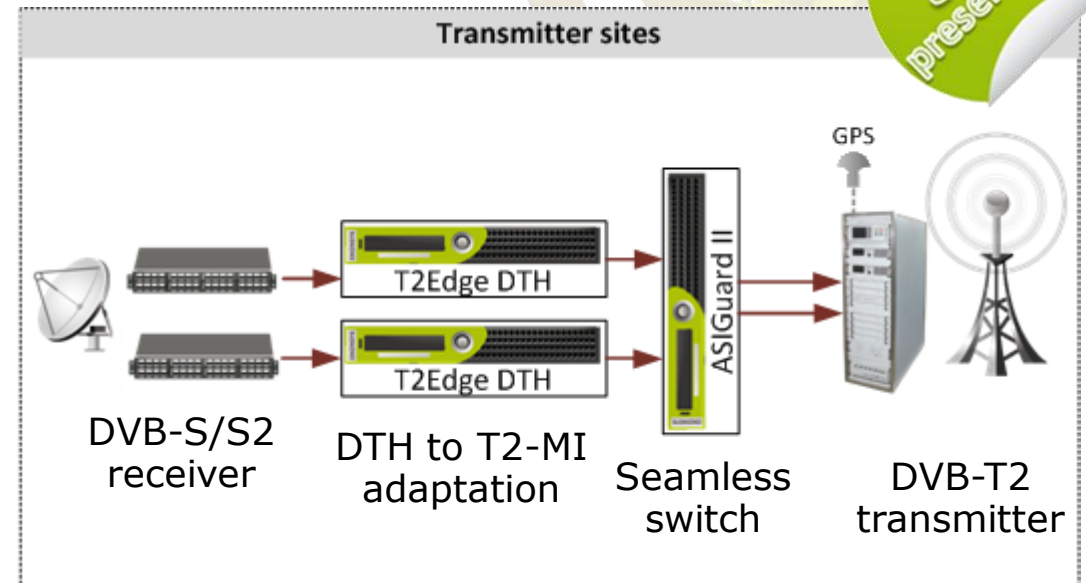
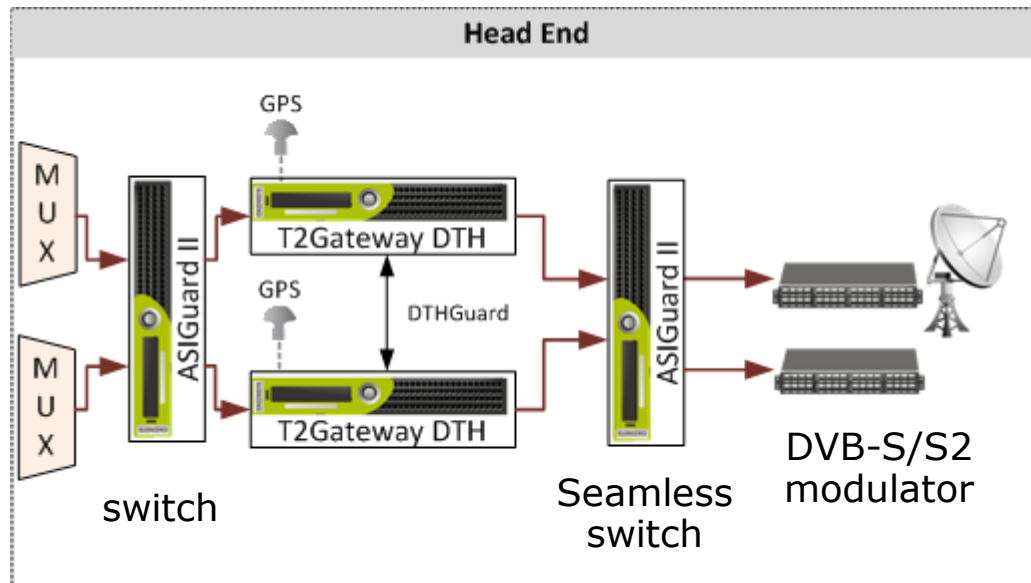


**OneBeam** is the ENENSYS solution  
to reduce satellite OPEX costs  
by delivering  
**Direct to Home TV**  
and  
**Digital Terrestrial TV distribution**  
in one satellite feed.



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

# DVB-T2 over DTH redundant architecture







CAPEX Optimization : only 1 Head-End for 2 bouquets

OPEX Optimization : only 1 satellite capacity for 2 bouquets

Black spot covered, which are not covered by DTT

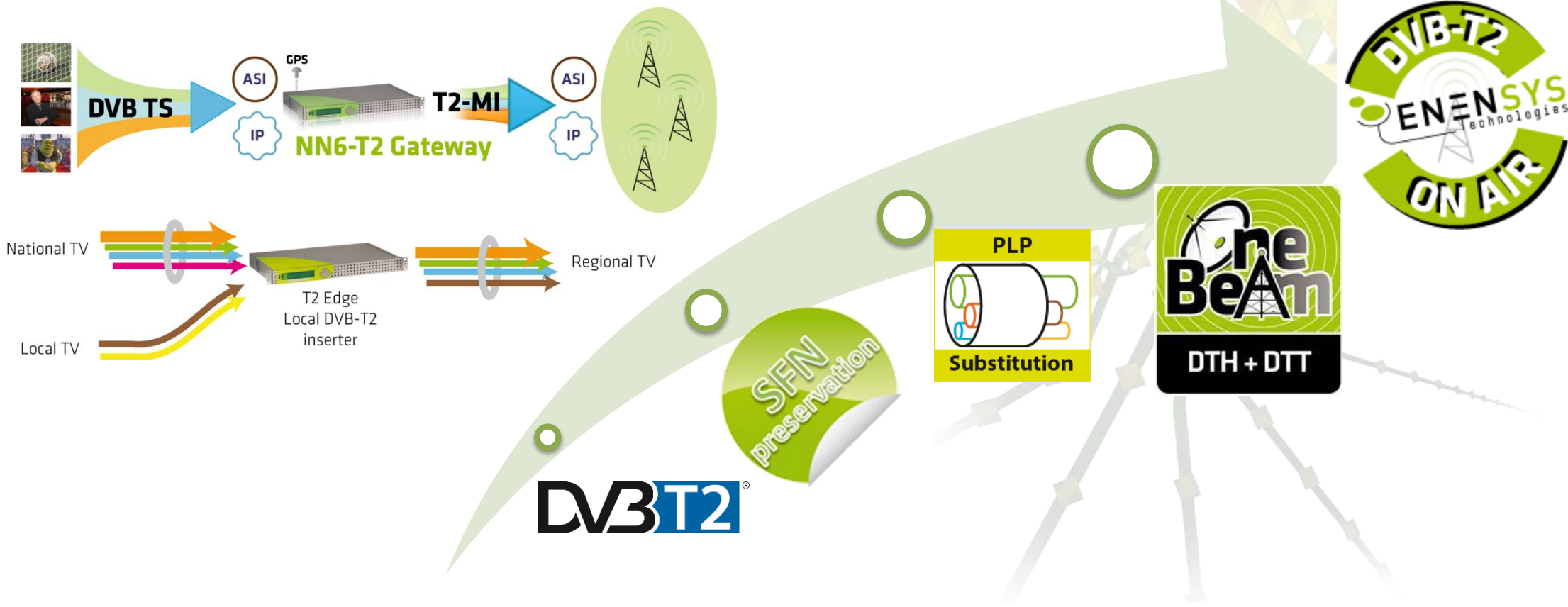
2 distinct offers: premium services in DTH, basic offer in DTT

The DTH bouquet could be used also as backup backbone for DTT distribution

# Conclusion of DVB-T2 Network Optimization

## • Conclusion

- ENENSYS **T2Gateway** + ENENSYS **T2Edge** = Reliability, Flexibility and Scalability of your architectures





**DVB-T2 Leader**

**Questions ?**

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