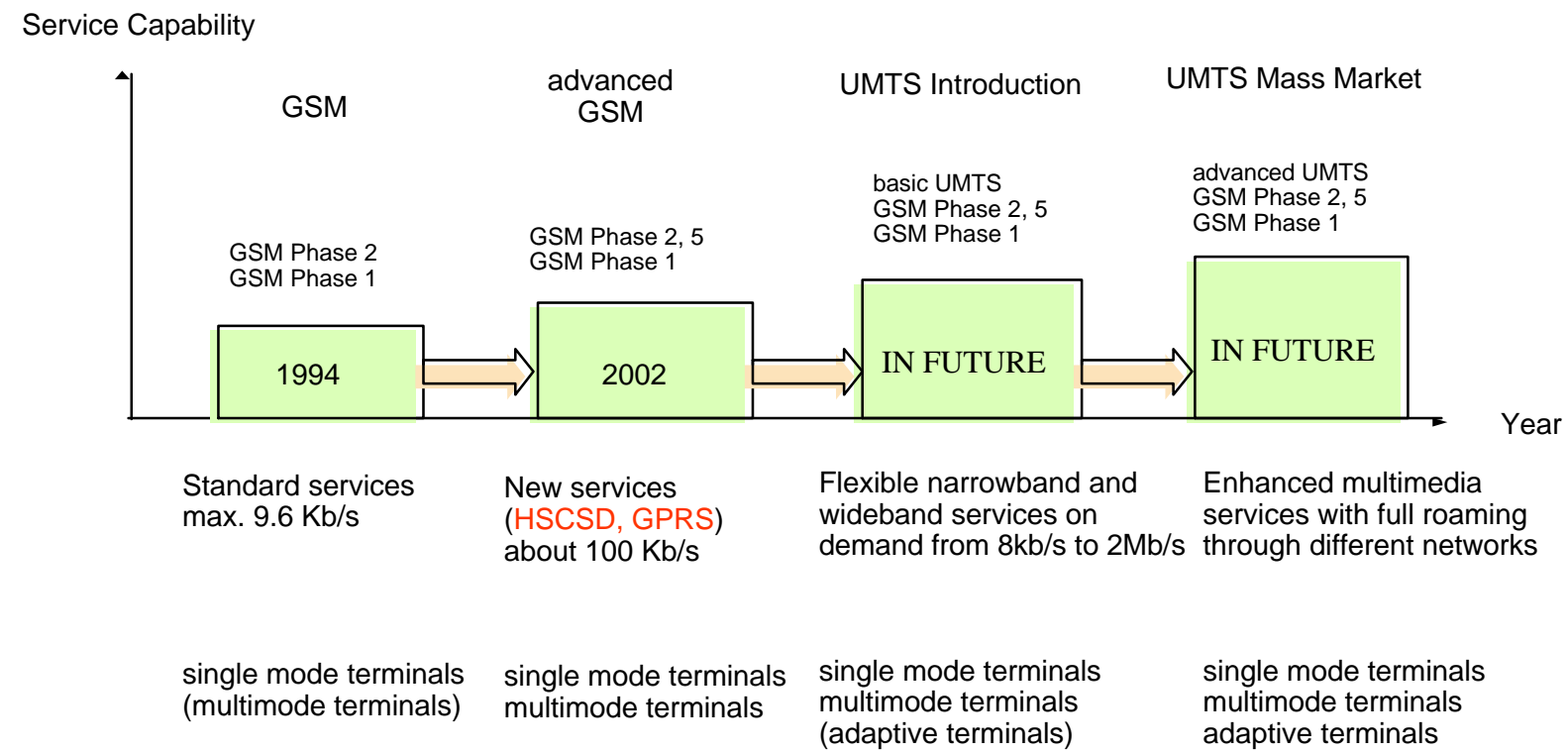


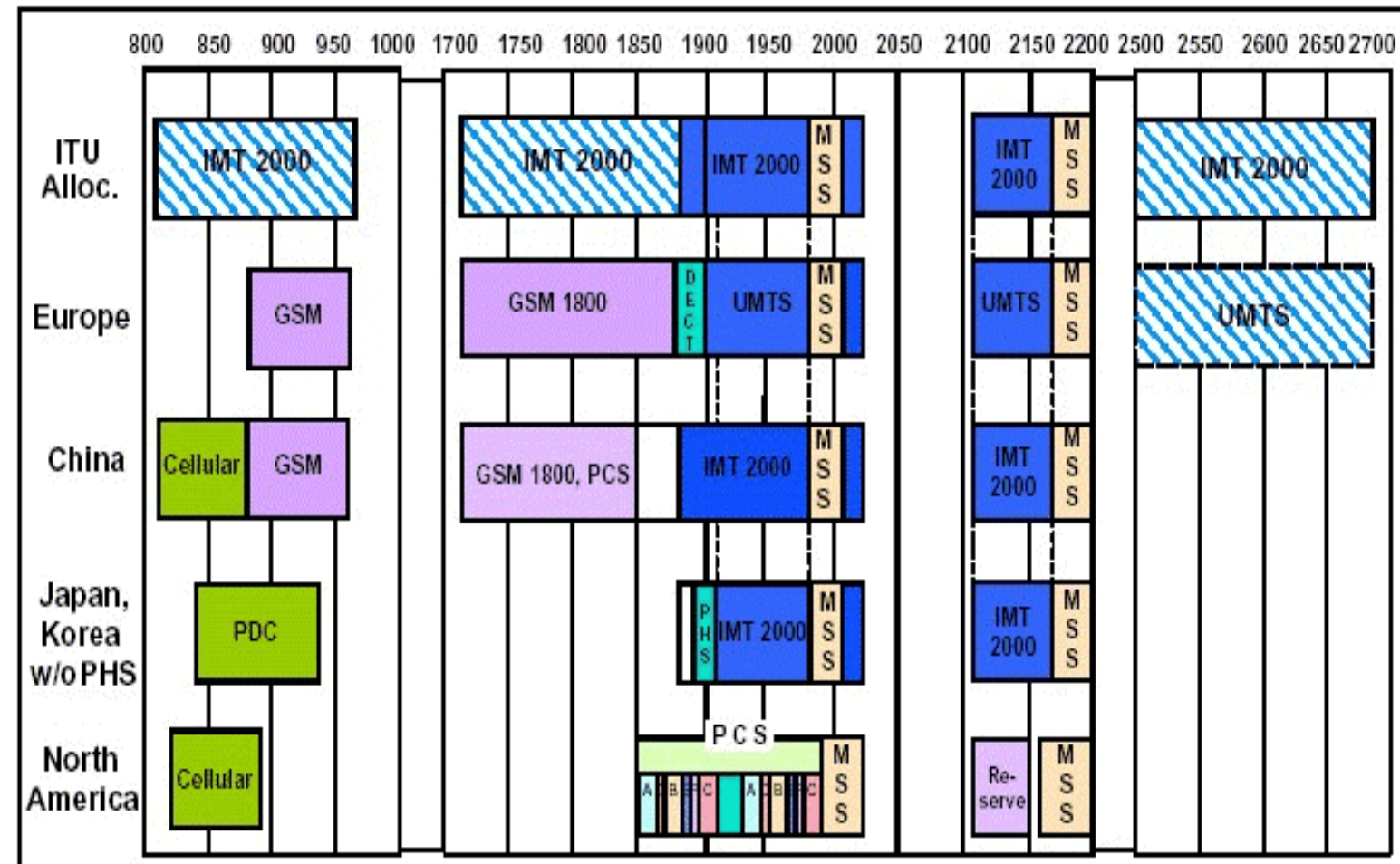
Migration from 2G to 3G in South Africa

S.A. progress: Roadmap from GSM to UMTS

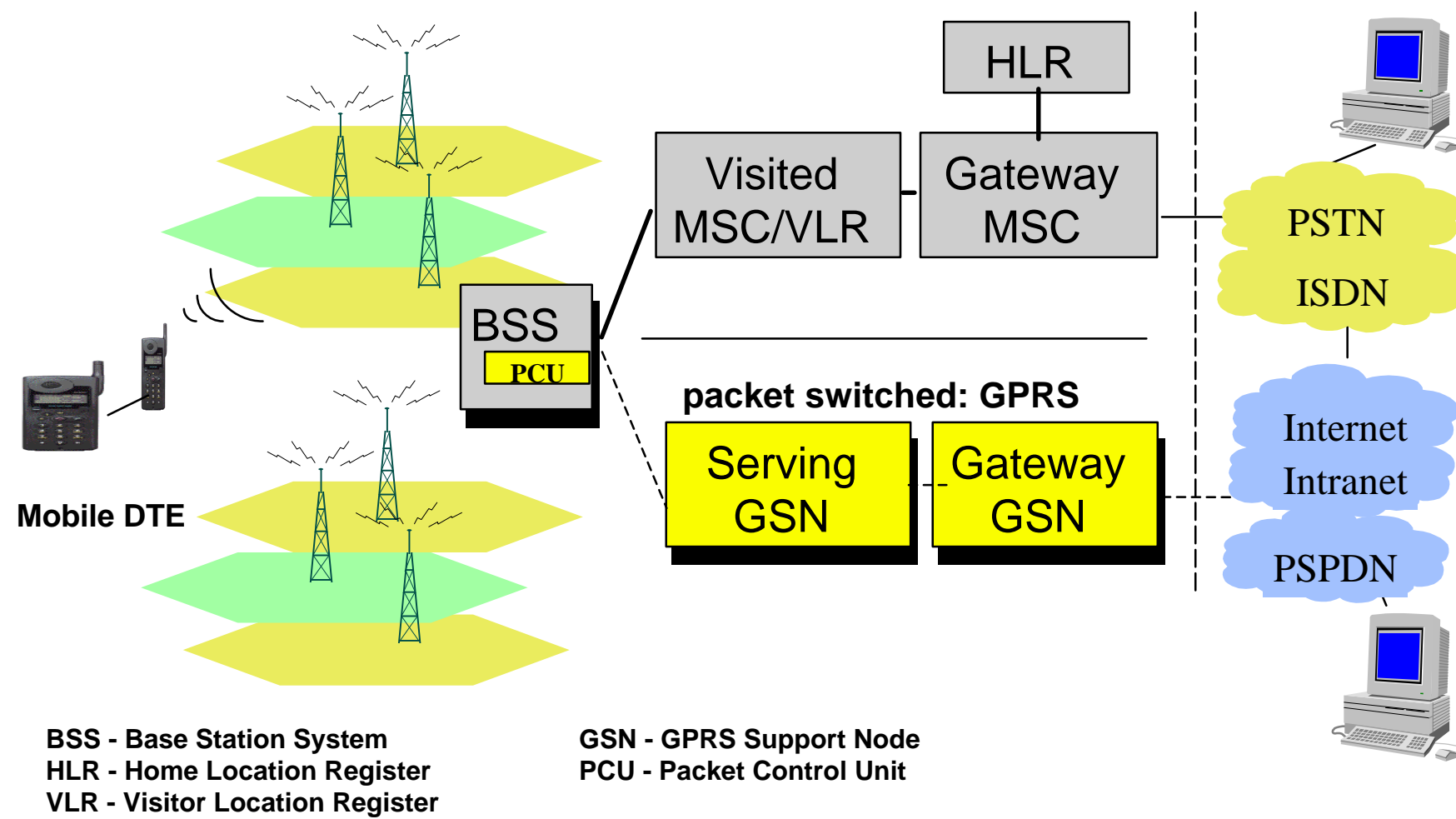


→ Evolution Path towards UMTS due to Market Demand

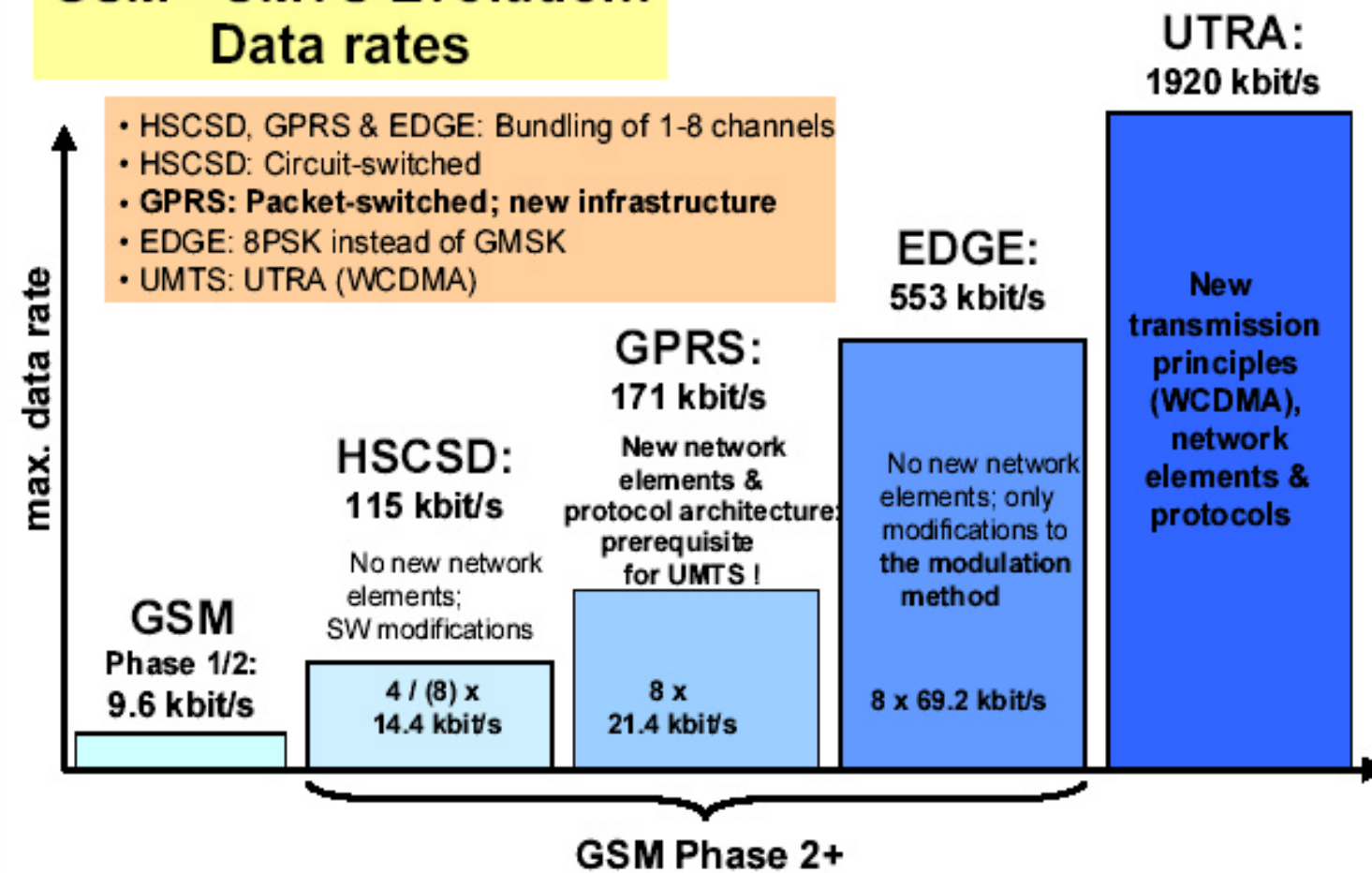
WRC-2000 IMT-2000 Frequencies



GPRS: a new data service in GSM



GSM - UMTS Evolution: Data rates



HSCSD: High Speed Circuit Switched Data
 GPRS: General Packet Radio Services
 EDGE: Enhanced Data rates for the GSM Evolution

8PSK: Phase Shift Keying
 GMSK: Gaussian Minimum Shift Keying
 UTRA: UMTS Terrestrial Radio Access

Disadvantages of current situation

- Disadvantages for user

- Restricted user data rate (9.6kBit/s)
- Calls routed over the PSTN / ISDN to the data networks:
higher price (PSTN access as transit network)
- Subscriber will be charged for connection time, not for usage
- Long call setup time ca. 20s (modems)
- Restricted length of SMS

- Disadvantages for operator

- No efficient resource management possible
- Restricted number of user
- SMS is not an ideal match for many applications



No possibilities to push data services as a mass market !

GSM Phase 2.5 addresses the disadvantages of current solution

Higher user data rates:

- Use of data compression (HSCSD, GPRS)
- Combining of traffic channels (HSCSD, GPRS)
- New channel coding (different for HSCSD and GPRS)

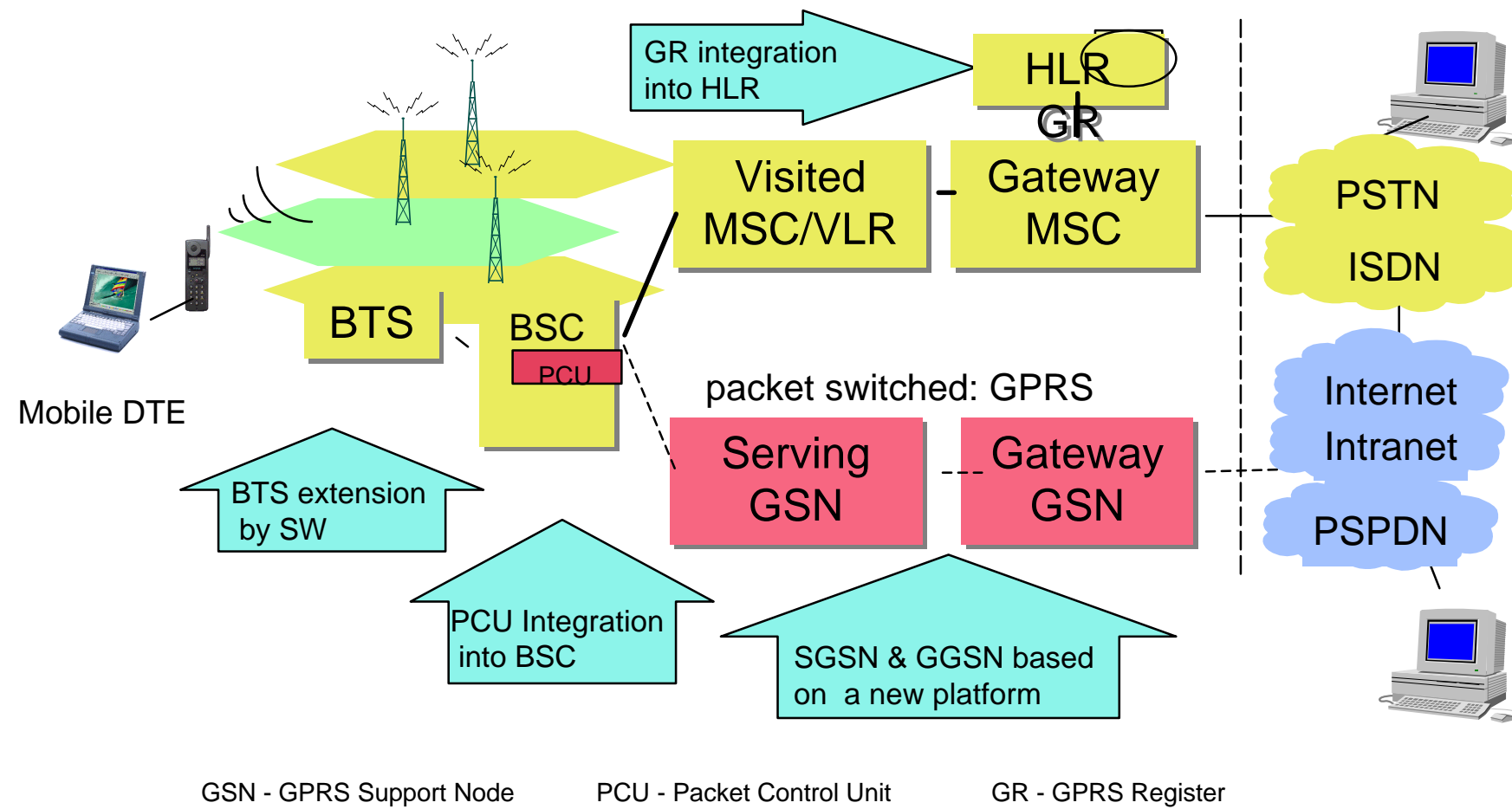
Increased radio resource efficiency - higher number of users:

- Shared access to the same channel (GPRS)

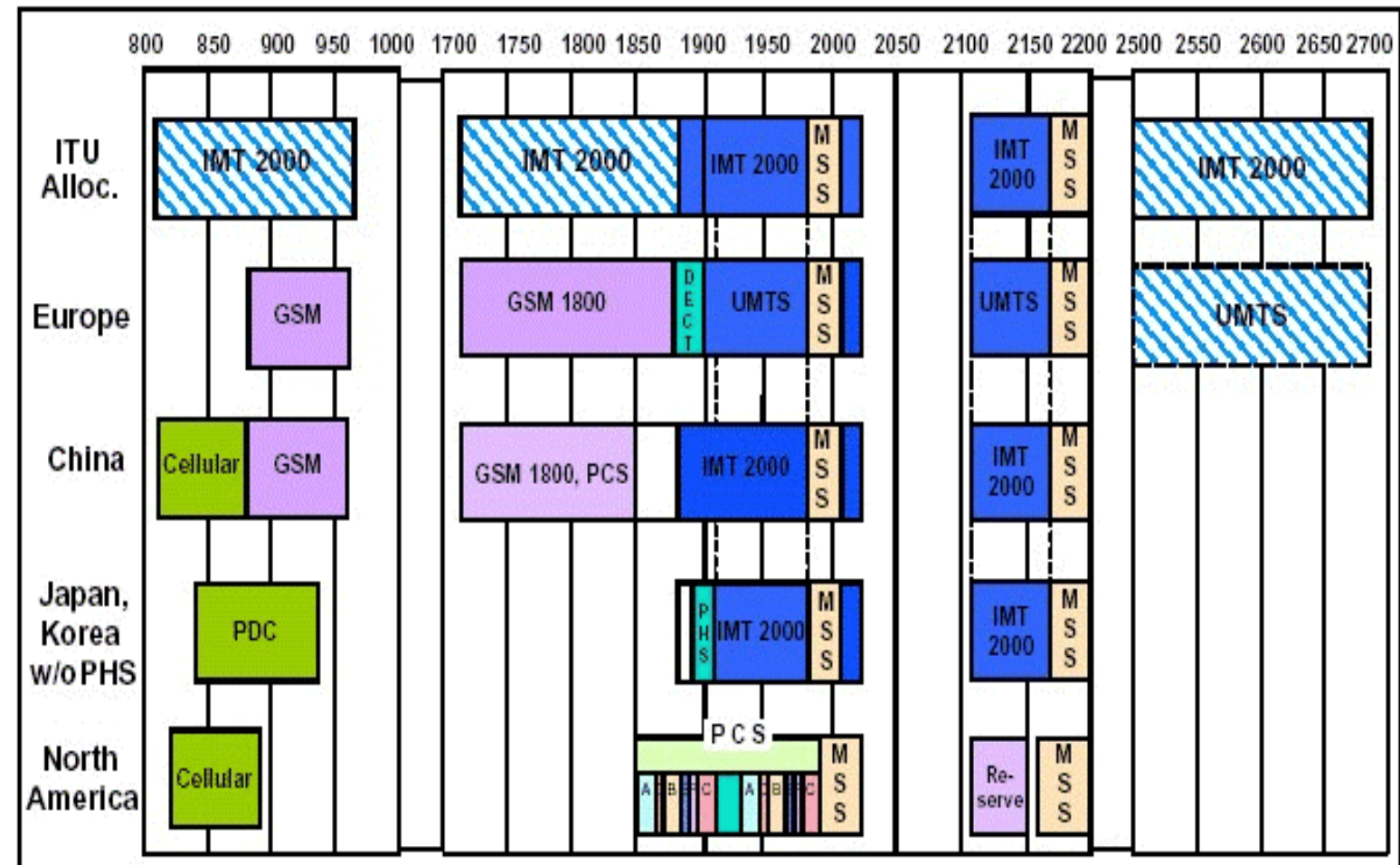
GPRS offers a path towards UMTS

- an evolution path to 3rd generation: UMTS
- a means to evolve from a predominantly voice to a mixed voice and data world: voice is also a kind of data !
- a means to exploit and enhance existing networks
- a solution where existing hardware need not be replaced. (Extremely cost effective)

GPRS : Key architecture



WRC-2000 IMT-2000 Frequencies



Questions

Thank you

The text 'Thank you' is rendered in a bold, sans-serif font. Each letter is filled with a different color from a rainbow spectrum: 'T' is magenta, 'h' is red, 'a' is orange, 'n' is yellow, 'k' is green, 'y' is blue, and 'o' is purple. The letters have a slight 3D effect with a white outline and a soft grey shadow cast to the left and slightly forward, giving them a sense of depth against the plain white background.