



Customer Presentation

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Agenda



- IP expansion
- Voice offer
- GIS
- Open points

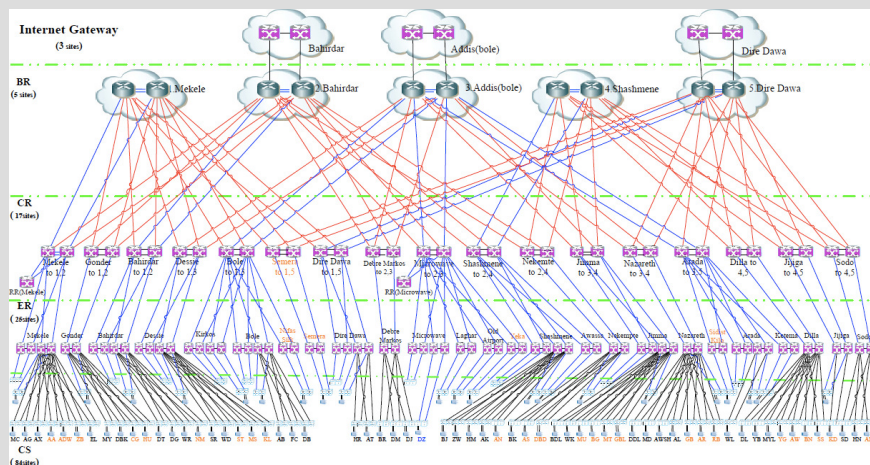
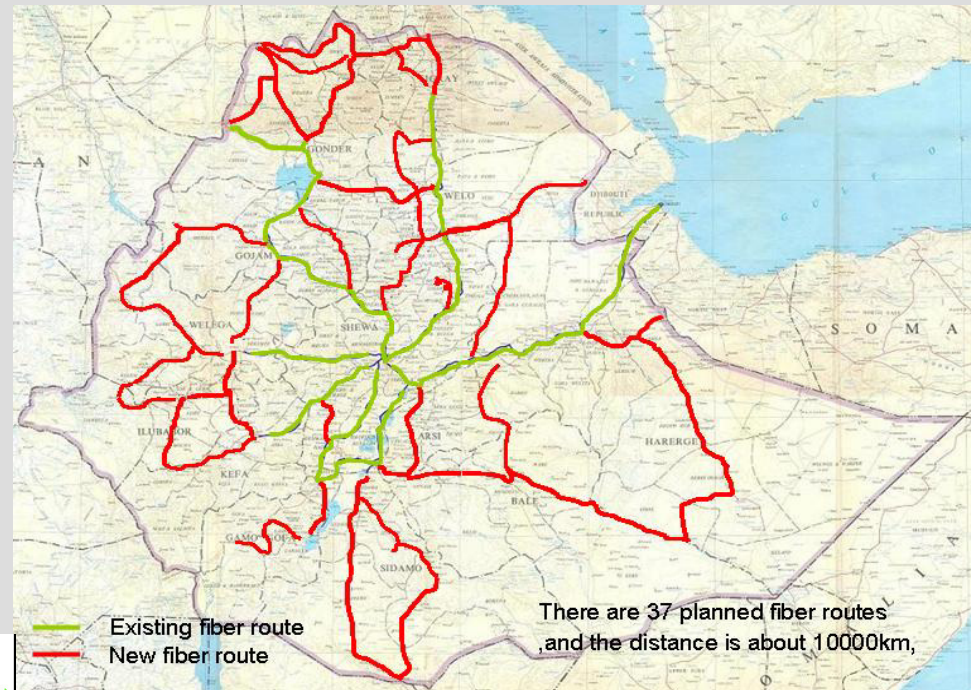
IP expansion - scope



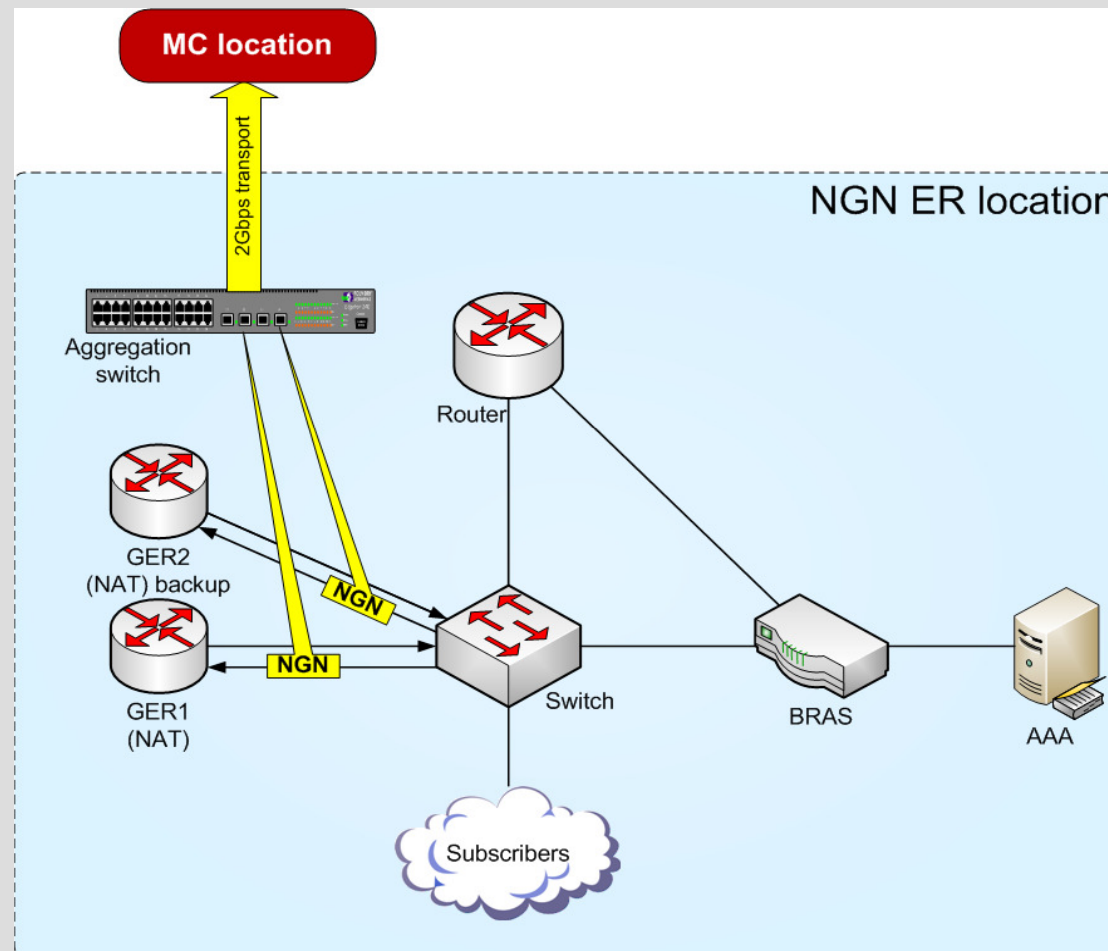
- Cover NGN subscribers
- 2 year storage of intercepts (currently 1 year)
- Antivirus system (is going to be delivered together with MC)

IP expansion – NGN Overview

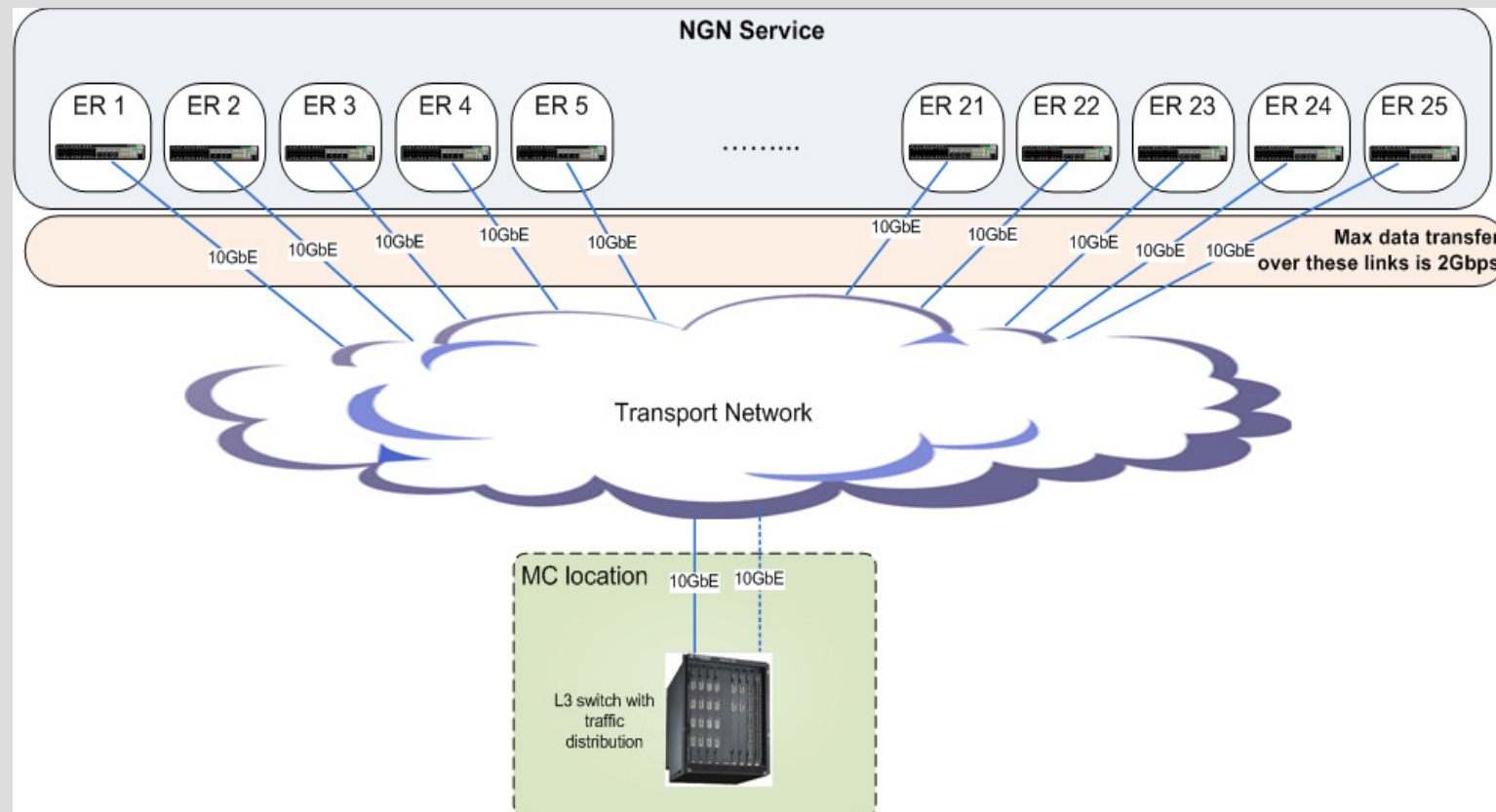
- 25 new locations
- Connected via Fiber DWDM



IP expansion – NGN ER location - example



IP expansion – NGN Transport Network



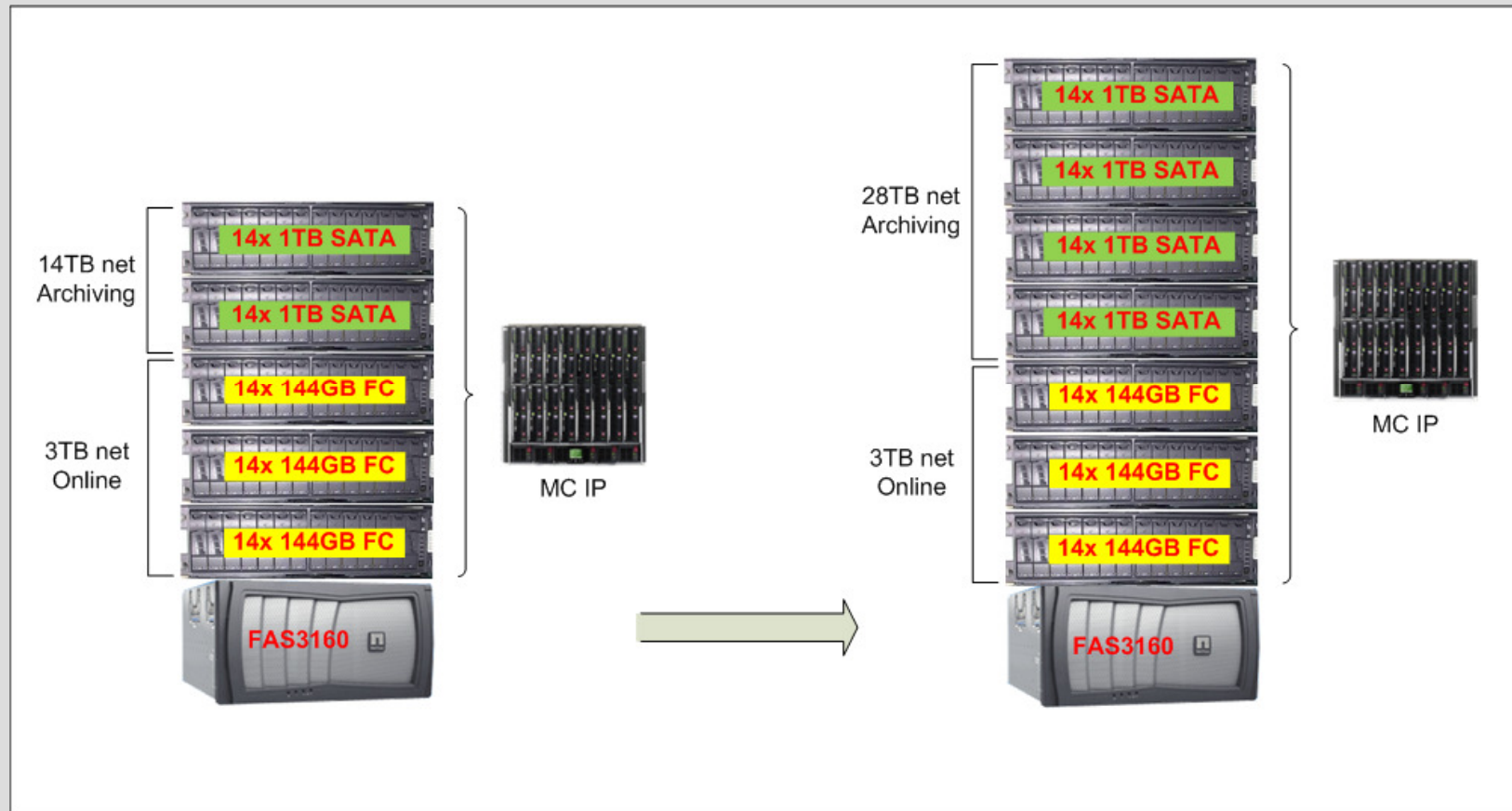
IP expansion – NGN ISP requirements



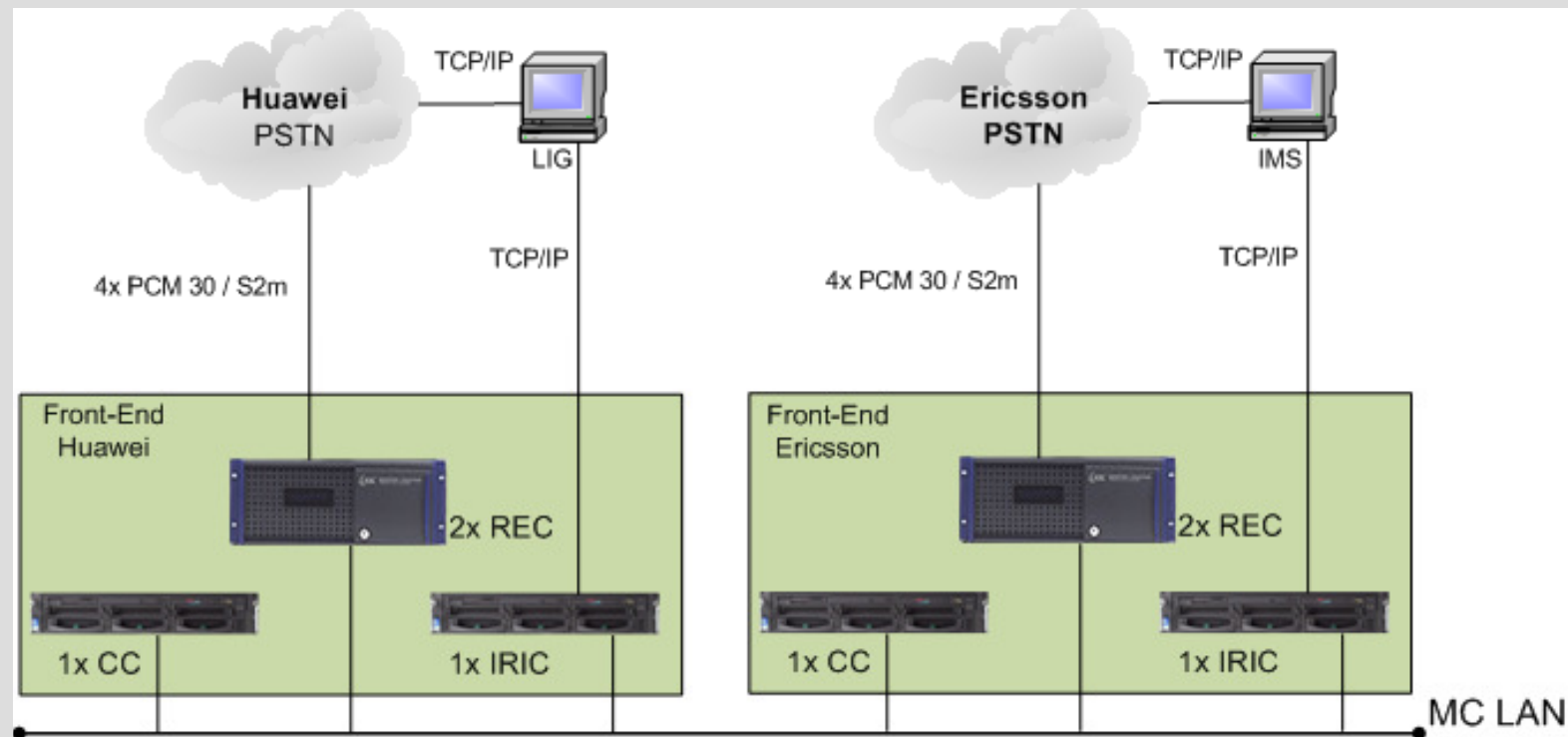
- 2 rack unit space in rack to mount Aggregation switch and Network Taps
- 2 free UPSed power lines (different power phases) with adequate non-earth leakage circuit breaker
- Room must have Air Conditioning. A temperature must be kept between + 10 °C and + 35 °C and a humidity between 20 % rH to 70 % rH (non condensing).
- All of the Radius traffic must be sent via SPAN using 1GbE UTP port. The same solution like described in Filwoha location can be used. Only Radius traffic shall be forwarded.
- From every aggregation switch the traffic (up to 2 Gbps) must be forwarded to the Monitoring Center. Every aggregation switch in ER locations has 10GbE (fiber 1310nm LC) link which must be connected to a transport network. The transport network must aggregate all links (from 25 locations) and send traffic to the MC - L2 transport is required (packets cannot be routed based on destination IP addresses). The Monitoring Center is able to get the traffic via one 10GbE (fiber 1310nm LC) link. Network shall be ready to send traffic over additional link 10GbE (fiber 1310nm LC, blue dotted line on the picture) if overall uplink and downlink traffic of NGN will exceed 10Gbps
- All current and future subscribers must have static IP addresses if the Radius is not in use.
- Dynamic addresses can be use only in combination with Radius authentication/authorization.
- The ISP must log all user IP address assignments and store them for at least 1 year (ISP must be able to determine who was using specific IP address at a particular time)
- Using NTP to ensure that all devices involved in the logging of IP address assignments have properly synchronized timing. The goal is to have all logged information with proper timestamps.
- Ethernet Frame according to IEEE 802.3 3.1.a or IEEE 802.3 3.1.b and the type (EtherType) must be 0x0800 (IPv4)

IP expansion – NGN

SAN expansion – 2 years of archiving



MC voice Frontends



MC voice GIS

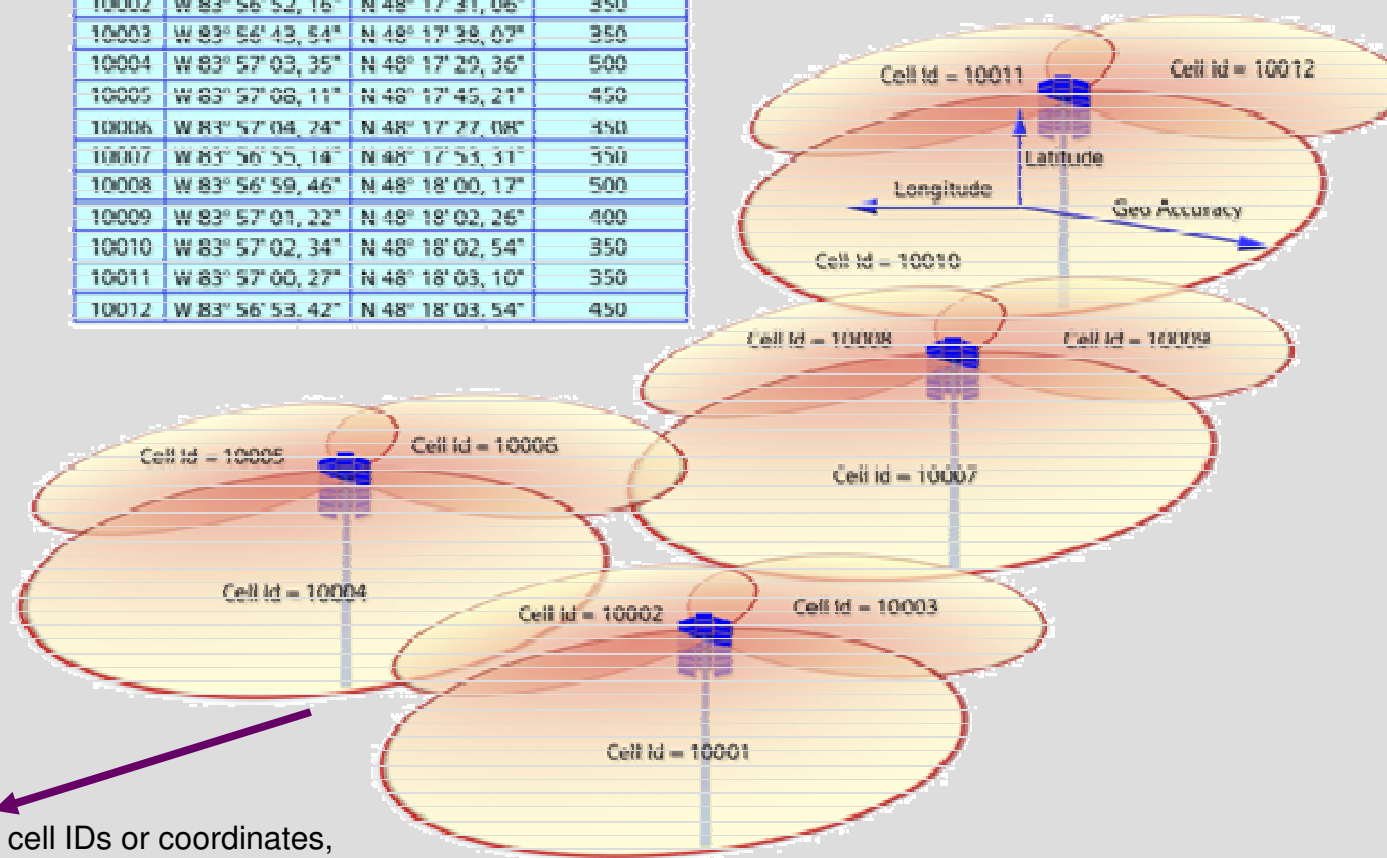


- Monitoring Center for the voice can be extended by Geographical Information System (GIS)
- GIS presents location of the subscriber based on Cell_ID (less precise than the positioning system). Accuracy of this solution depends on a size of 2G/3G cells
- Very cheap solution in comparison to the positioning systems
- Users must be marked before their locations can be gathered
- Integration with GSM switch vendor needed (ZTE)
- Additional Front-End for ZTE is needed as well as more space for data and licences

MC voice GIS - GUI



Cell id	Longitude	Latitude	Geo Accuracy
10001	W 83° 56' 42, 19"	N 48° 17' 23, 04"	350
10002	W 83° 56' 52, 16"	N 48° 17' 31, 06"	350
10003	W 83° 56' 43, 54"	N 48° 17' 38, 07"	350
10004	W 83° 57' 03, 35"	N 48° 17' 29, 36"	500
10005	W 83° 57' 08, 11"	N 48° 17' 45, 21"	450
10006	W 83° 57' 04, 24"	N 48° 17' 27, 08"	450
10007	W 83° 56' 55, 14"	N 48° 17' 53, 31"	350
10008	W 83° 56' 59, 46"	N 48° 18' 00, 17"	500
10009	W 83° 57' 01, 22"	N 48° 18' 02, 26"	400
10010	W 83° 57' 02, 34"	N 48° 18' 02, 54"	350
10011	W 83° 57' 00, 27"	N 48° 18' 03, 10"	350
10012	W 83° 56' 53, 42"	N 48° 18' 03, 54"	450



MC



cell IDs or coordinates,
if available within the network,
in IRI messages

Open Points



- ZTE switch specification
- Trueposition



Thank you!

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