**Project Description:**

To build a SMS capable GSM network, including radio access network. A SMS capable MSC & VLR is developed by the project group. The MSC/VLR is integrated with Mobile Arts SMSC and HLR, and with the open source project openBSC + compatible radio hardware to create a complete GSM network. All signaling is standards compliant and the final goal is to enable sending and receiving SMS between ordinary mobile phones registered to the network.

**Possible Future Work:**

Adding more GSM functionality:
- Calls
- Roaming
- Billing
- Authentication
- Encryption

**Components:**

HLR: Home Location Register  
SMSC: Short Message Service Centre  
VLR: Visitor Location Register  
MSC: Mobile Switching Centre  
LM: Location Management  
SS7: SignallingSystem No 7 (Set of Protocols)  
MT Server: Mobile terminating Server  
MO Server: Mobile Origination Server  
BSC: Base Station Controller  
BTS: Base Transceiver Station  
MS: Mobile Station

**Technologies:**

- Erlang/OTP  
- Mobile Arts SMSC  
- Mobile Arts HLR  
- Tieto Enator SS7 Stack  
- OpenBSC  
- IP Access Nano BTS  
- Erlang-C Bridge  
- Inhouse BSSMAP implementation over existing SCCP library  
- CouchDB  
- VMware Server  
- Wireshark