MESB 9-1-1 Network Service Standards
Board's Standards for inclusion in the State 9-1-1 Rules 3-9-2005

OVERALL	STANDARD
System Integration	There will be a system integrator for the 911 system designated by the county in their 911 plan. The system integrator will perform coordination and oversight functions for the entire 911system as jointly defined with the county.
ROUTING	
Selective Routing	911 calls will automatically be routed, as specified by the county plan, to the PSAP that provides dispatching services for the public safety agencies serving the area from which the 911 is placed.
Redundant routing equipment	There will be redundant routing equipment so that if one router malfunctions the other switching device will continue to route all calls that originate in the 911 system.
Default routing plan	The system shall be designed so that if the normal means of routing a call malfunctions, a default routing plan, as adopted by the county, will be used to route the call to an alternate location.
Routing of 9-1-1 calls from central offices	Trunk groups will be set up so that for every trunk group to the primary selective router, a corresponding trunk group is set up to the secondary selective router. If the SS7 system fails and the call cannot be routed to the selective routers, the call will be routed to re-order tone.
Routing 911 calls from wireless telephones	The network will be capable of selectively routing wireless 911 calls to the PSAP that serves the area from which the call was placed.
911 calls from PBX extensions	The network and ALI database will be capable of selectively routing 911 calls to the PSAP that serves the area from which the call was placed.
VOICE NETWORK	
Call Setup time	911 calls will be completed within 8 seconds after the caller dials the last digit, 1.
Tone signals to the caller	The tones heard by the caller will be the same as are used in the public switch telephone network.
911 call delivery	The 911 system will be designed with dedicated voice trunks on dedicated facilities that are not shared with any other telecommunications traffic.
Call hold	The 911 system shall be designed so that the call taker can place a 911 call on hold, answer another call, and then return to the first call.
Identify dedicated 911 facilities	All telephone equipment that is used exclusively for 911, or which is essential to the operation of the 911 system, shall be clearly labeled as a 911 component to ensure proper handling.
Network capacity	P.01 minimum grade of service such that not more than one call out of 100 incoming calls receive a busy signal on the first dialing attempt during a busy hour of an average week during the busy month.
Traffic studies	Traffic studies for the entire network will be conducted at least annually with reports given to the PSAPs and the county's 911 system coordinator. If P.01 service is not being met, the system integrator will recommend the required trunking quantities. Carriers will conduct traffic busy studies for their respective end office 911 voice trunks. The system integrator will conduct usage studies on the incoming voice trunks to the tandem as well as busy and usage studies on the tandem to PSAP voice trunks.
SS7 Network Standards	All carriers will review their SS7 network annually and document to the Board and to the State that their systems are compliant with the SS7 Network Standards contained in their 911 Agreement as a part of the annual diversity audit.
Central office isolation and alternate routing	Trunking will be arranged to minimize the likelihood of central office isolation due to cable cuts or other equipment failures. There will be an alternate means of transmitting a 911 call to aPSAP in the event of failures.

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Diversity	911 voice trunks will have interoffice, loop & carrier system diversity when such diversity can be achieved using existing facilities. Voice trunks will be divided as equally as possible across available carrier systems. SS7 "A" links will have interoffice, loop and carrier system diversity. If no diversity, an alternate means of completing the call will be provided at the option of the county. Diversity will be maintained or upgraded to utilize the highest level of diversity available in the network. 120 days notification will be given prior to major network changes.
Monitoring of equipment and voice trunks	Carriers will monitor network equipment. SS7 networks, and voice trunks used for 911. Monitoring will be conducted by the system integrator at the individual trunk level for 911 voice trunks of all carriers at the tandem switch.
Affects of host-remote central offices on the 911 call delivery	Host-remote central office technology will not degrade 911 service or affect 911 in any way. There will be separate trunk groups out of the host for each remote. Where the umilical is not diverse, al alternate means of completing the 911 call will be provided at the option of the county.
Immediate Ring Tone	If the carrier's switch is capable, immediate ring tone shall be presented to the caller.
Transfering 911 calls to another PSAP	A PSAP receiving a transfer from another connected PSAP will have the correct ANI & ALI. The first call taker will be able to remain connected as a third party to the call. When they go of off-line, the caller will remain connected to the transfer location.
REPAIR SERVICE	
Trouble reporting	A 24 hour, 7 day a week trouble reporting repair center will be maintained by the system integrator and staffed by employees trained in 911 and knowledgeable in the county's 911 system. All carriers will be available 24 hours, 7 days a week to receive a trouble report from the system integrator.
Repair service performance standards	Repair service will begin within 2 hours of receipt of a report of a malfunction. Repair service includes testing & diagnostic service from a remote location, dispatch of or on-site visit(s) of personnel. Technicians will be dispatched without delay. Priority effort will be given to trouble conditions which, in the opinion of the PSAP manager, require immediate attention due to the severity of the service impact.
PSAP notificaion of network and ALI failures	Affected PSAPs will be notified by the system integrator within 15 minutes of telco identification of the failure. If the problem persists, the system integrator will provide hourly updates to the impacted PSAP(s).
Disaster recovery plan	The system integrator will design, implement and maintain a disaster recovery process for the 911 network and database systems. All other carriers will design, implement, and maintain disaster recovery plans for their portion of the network. CLECs will include Disaster Recovery Plans in their 911 Plans filed with the Minnesota Public Utilities Commission.
ANI	
ANI	The telephone number of the device used to place the 911 call will be displayed at the PSAP at the time the call is answered. This includes the capability to provide 10-digit call back number.
ALI NETWORK	
ALI delivery time	ALI information will be delivered to the PSAP within 2 seconds. Depending upon the type of CPE, the first character of the ALI is delivered in less than 2 seconds after the call is received by the equipment, or after the call is answered by a call taker.
Redundant location informaion databases	Location information databases and related hardware will be redundant and configured so that failure of one unit will not cause a malfunction of the 911 location information system.
Diversity of the location information network	ALI links will have interoffice, loop & carrier system diversity when such diversity can be achieved using existing facilities. ALI links will be divided as equally as possible across available carrier systems. Diversity will be maintained or upgraded to utilize the highest level of diversity available in the network. 120 days notification will be given prior to major network changes. 911 Service Provider will conduct & document an annual audit to confirm optimum diversity.