

## 911 NETWORK SERVICE STANDARDS

For inclusion in the State 911 Rules - 3/9/05

ELEMENT OF SERVICE	STANDARD
<b>OVERALL</b>	
<b>System integration</b>	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 911 system as jointly defined with the county.
<b>ROUTING</b>	
<b>Selective Routing</b>	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.
<b>Redundant routing equipment</b>	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.
<b>Default routing plan</b>	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.
<b>Routing of 911 calls from central offices</b>	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.
<b>Routing 911 calls from wireless telephones</b>	The network will be capable of selectively routing wireless 911 calls to the PSAP that serves the area from which the call was placed.
<b>911 calls from PBX extensions</b>	The network and ALI database will be capable of selectively routing 911 calls from PBX extensions to the appropriate PSAP and delivering the correct ANI and ALI of the extension which placed the 911 call.
<b>VOICE NETWORK</b>	
<b>Call Setup time</b>	911 calls will be completed within 8 seconds after the caller dials the last digit, 1.
<b>Tone signals to the caller</b>	The tones heard by the caller will be the same as are used in the public switch telephone network.
<b>911 call delivery</b>	The 911 system will be designed with dedicated voice trunks on dedicated facilities that are not shared with any other telecommunications traffic.
<b>Call hold</b>	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.
<b>Identify dedicated 911 facilities</b>	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.
<b>Network capacity</b>	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.
<b>Traffic studies</b>	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 & usage studies on the tandem to PSAP voice trunks.
<b>SS7 Network Standards</b>	All carriers will review their SS7 network annually and confirm 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.
<b>Central office isolation and alternate routing</b>	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 a PSAP in the event of failures.
<b>Diversity</b>	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 & 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. Carriers will conduct & document an annual audit to confirm optimum diversity.
<b>Monitoring of equipment and voice trunks</b>	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.
<b>Affects of host-remote central offices on the 911 call delivery system</b>	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 umbilical is not diverse, an alternate means of completing the 911 call will be provided at the option of the county.
<b>Immediate Ring Tone</b>	If the carrier's switch is capable, immediate ring tone shall be presented to the caller.
<b>Transferring 911 calls to another PSAP</b>	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 off-line, the caller will remain connected to the transfer location.
<b>REPAIR SERVICE</b>	
<b>Trouble reporting</b>	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 trouble reports from the system integrator.
<b>Repair service performance standards</b>	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.
<b>PSAP notification of network &amp; ALI failures</b>	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). Monthly outage summary reports will be provided by the system integrator to the county's 911 system coordinator, including an analysis of outages not corrected within 1 hour.
<b>Disaster recovery plan</b>	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.
<b>ANI</b>	
<b>ANI</b>	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.
<b>ALI NETWORK</b>	

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<b>ALI delivery time</b>	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.
<b>Redundant location information databases</b>	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.
<b>Diversity of the location information network</b>	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.