

APPENDIX A: SYSTEM REQUIREMENTS TABLE OF SAMPLE STATEMENTS (PARTIAL)

Requirements Document Reference Number	System Requirements Sample Statements	Need Statement (ConOps)
3	Requirements	
3.1	Functional System Requirements	
3.1.1	Access Control	
3.1.1.1	<p>The system shall provide monitoring and control access from the following locations.</p> <ul style="list-style-type: none"> * Agency TMC * Agency LAN or WAN * Other agency TMC (SPECIFY) * Local controller cabinets (hard wire) * Local controller cabinets (wireless) * Remote location via internet 	<p>4.1.4.1 The TSS Operator needs to manage the system database from the following locations: (EDIT TO SUIT YOUR SITUATION)</p> <ul style="list-style-type: none"> * Multiple workstations in the TMC * Multiple networked workstations on the City's LAN or WAN located at (USER SPECIFY) * Workstations at other Agencies' TMC (USER SPECIFY) * At the local controller cabinet using a hard wire connection * At the local controller cabinet using a wireless connection * Remote locations connected to the internet (USER SPECIFY, such as employee's home, maintenance vehicle, etc.)

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3.1.1.2	The system shall allow remote access using a secure Virtual Private Network (VPN).	4.1.4.1 The TSS Operator needs to manage the system database from the following locations: (EDIT TO SUIT YOUR SITUATION) <ul style="list-style-type: none"> * Multiple workstations in the TMC * Multiple networked workstations on the City's LAN or WAN located at (USER SPECIFY) * Workstations at other Agencies' TMC (USER SPECIFY) * At the local controller cabinet using a hard wire connection * At the local controller cabinet using a wireless connection * Remote locations connected to the internet (USER SPECIFY, such as employee's home, maintenance vehicle, etc.)
3.1.1.3	The system shall allow operators from different agencies to view/edit traffic signal databases owned by other agencies, subject to assigned privilege level.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.1.3	The system shall allow operators from different agencies to view/edit traffic signal databases owned by other agencies, subject to assigned privilege level.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.

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3.1.1.3	The system shall allow operators from different agencies to view/edit traffic signal databases owned by other agencies, subject to assigned privilege level.	4.1.4.5 The TSS Operator needs to view the status of multiple agency signals, edit the intersection databases, and/or create reports, as allowed by permission.
3.1.1.4	The system shall allow XX number of users to log on to the system simultaneously.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.1.4	The system shall allow XX number of users to log on to the system simultaneously.	4.1.4.3 The TSS Operator needs to make changes to an intersection database, disabling the ability of other TSS Operators to simultaneously make changes to the same intersection database.
3.1.1.4	The system shall allow XX number of users to log on to the system simultaneously.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.5	The system shall allow multiple operators to access an intersection database simultaneously.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.

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3.1.1.5	The system shall allow multiple operators to access an intersection database simultaneously.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.6	The system shall allow multiple TSS Operators to view the status of an intersection or group of intersections simultaneously.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.1.6	The system shall allow multiple TSS Operators to view the status of an intersection or group of intersections simultaneously.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.6	The system shall allow multiple TSS Operators to view the status of an intersection or group of intersections simultaneously.	4.5.7.1.2 The TSS Operator needs to select a predetermined group of intersections to monitor.
3.1.1.7	The system shall restrict control of each intersection database to a single user at a time.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.

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3.1.1.7	The system shall restrict control of each intersection database to a single user at a time.	4.1.4.3 The TSS Operator needs to make changes to an intersection database, disabling the ability of other TSS Operators to simultaneously make changes to the same intersection database.
3.1.1.7	The system shall restrict control of each intersection database to a single user at a time.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.7.1	The system shall release lock of intersection database after a user-specified period of inactivity.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.1.7.1	The system shall release lock of intersection database after a user-specified period of inactivity.	4.1.4.3 The TSS Operator needs to make changes to an intersection database, disabling the ability of other TSS Operators to simultaneously make changes to the same intersection database.
3.1.1.7.2	The system shall allow access to a traffic signal database on a first come, first served basis.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.

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3.1.1.7.2	The system shall allow access to a traffic signal database on a first come, first served basis.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.7.3	The system shall allow administrator to terminate intersection control by other users with lesser user rights.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.1.7.3	The system shall allow administrator to terminate intersection control by other users with lesser user rights.	4.1.4.3 The TSS Operator needs to make changes to an intersection database, disabling the ability of other TSS Operators to simultaneously make changes to the same intersection database.
3.1.1.7.3	The system shall allow administrator to terminate intersection control by other users with lesser user rights.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.1.8	The system shall allow access to a traffic signal database based on user privileges.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent

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		functions at different intersections or to view the same intersection.
3.1.1.8	The system shall allow access to a traffic signal database based on user privileges.	4.1.4.4 The TSS Operator needs to view the status of an intersection or group of intersections even when another TSS Operator is editing the intersection database.
3.1.2	Security	
3.1.2.1	<p>The system shall provide the ability to control and limit user access via user privileges (allowing for different levels of user access to system features and functions).</p> <ul style="list-style-type: none"> * Local access to the system * Remote access to the system * System monitoring * System manual override * Database * Administration of the system * Signal controller group access * Access to classes of equipment * Access to equipment by jurisdiction * System parameters * Report generation * Configuration * Security alerts 	4.1.4.5 The TSS Operator needs to view the status of multiple agency signals, edit the intersection databases, and/or create reports, as allowed by permission.
3.1.2.2	The system shall provide user privileges definable for the following:	4.1.4.7

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		<p>The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.</p>
3.1.2.2.1	Geographic area	<p>4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.</p>
3.1.2.2.2	Time of Day	<p>4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.</p>
3.1.2.2.3	Device ownership	<p>4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and</p>

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		conform to the agency's access and network infrastructure security policies.
3.1.2.3	The system shall provide user privileges definable on a functional level:	4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.
3.1.2.3.1	TSS Manager	4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.
3.1.2.3.2	TSS Operator	4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.
3.1.2.3.3	External System	4.1.4.7

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		<p>The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.</p>
3.1.2.3.4	TSS Maintainer	<p>4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.</p>
3.1.2.4	The system shall comply with the agency's security policy as described in (specify appropriate policy document)	<p>4.1.4.6 The TSS Operator needs secure access to the system consistent with the existing agency network policies.</p>
3.1.2.4	The system shall comply with the agency's security policy as described in (specify appropriate policy document)	<p>4.7.1.2 The TSS Designer needs to use equipment and software acceptable under current agency IT policies and procedures (USER TO SPECIFY)</p>
3.1.2.5	The system shall provide full access to the administrator.	<p>4.1.4.5 The TSS Operator needs to view the status of multiple agency signals, edit the intersection databases, and/or create reports, as allowed by permission.</p>

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3.1.2.5	The system shall provide full access to the administrator.	4.1.4.6 The TSS Operator needs secure access to the system consistent with the existing agency network policies.
3.1.2.6	The system shall show operators/administrator who is logged in to the system at a given time.	4.1.4.2 Multiple system TSS Operators need to log on to the system simultaneously in order to do independent functions at different intersections or to view the same intersection.
3.1.2.7	<p>For Adaptive Systems, the ASCT shall be implemented with a security policy that addresses the following selected elements:</p> <ul style="list-style-type: none"> * Local access to the ASCT * Remote access to the ASCT * System monitoring * System manual override * Development * Operations * User login * User password * Administration of the system * Signal controller group access * Access to classes of equipment * Access to equipment by jurisdiction * Output activation * System parameters * Report generation 	4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.

Requirements Document Reference Number	System Requirements Sample Statements	Need Statement (ConOps)
	<ul style="list-style-type: none"> * Configuration * Security alerts * Security logging * Security reporting * Database * Signal controller 	
3.1.2.8	The ASCT shall provide monitoring and control access at the following locations:	4.4.2.1 The TSS Operator needs to monitor and control all required features of adaptive operation from the following locations: (Edit and select as appropriate to suit your situation.)
3.1.2.8.1	Agency TMC	4.4.2.1.1 Agency TMC
3.1.2.8.2	Agency LAN or WAN	4.4.2.1.2 Maintenance facility
3.1.2.8.2	Agency LAN or WAN	4.4.2.1.3 Workstations on agency LAN or WAN located at (specify)
3.1.2.8.3	Other agency TMC (Specify)	4.4.2.1.3 Workstations on agency LAN or WAN located at (specify)
3.1.2.8.3	Other agency TMC (Specify)	4.4.2.1.4 Other agency's TMC (specify)
3.1.2.8.4	Other agency TMC (Specify)	4.4.2.1.4

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		Other agency's TMC (specify)
3.1.2.8.5	Local controller cabinets (wireless)	4.4.2.1.5 Local controller cabinets
3.1.2.8.6	Local controller cabinets (hard wire)	4.4.2.1.5 Local controller cabinets
3.1.2.8.7	Remote locations via internet	4.4.2.1.6 Maintenance vehicles
3.1.2.8.8	Remote locations via internet	4.4.2.1.7 Remote locations (specify)
3.1.2.9	The ASCT shall comply with the agency's security policy as described in (specify appropriate policy document).	4.1.4.7 The TSS Manager needs to have a security management and administrative system that allows access and operational privileges to be assigned, monitored and controlled by a TSS Manager, and conform to the agency's access and network infrastructure security policies.
3.1.2.10	The ASCT shall not prevent access to the local signal controller database, monitoring or reporting functions by any installed signal management system.	4.4.2.2 The operator needs to access to the database management, monitoring and reporting features and functions of the signal controllers and any related signal management system from the access points defined for those system components.

