

**Project MESA;
Service Specification Group - Services and Applications;
Basic requirements**

Project
MESA



Reference

DTR/MESA-SA0070003v311

Keywords

digital, radio, safety, SAR, satellite

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Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This Technical Report (TR) has been produced by the Public Safety Partnership Project (MESA).

The contents of the present document are subject to continuing work within the Specification Group (SG) and may change following formal SG approval. Should the SG modify the contents of the present document, it will be re-released by the SG with an identifying change of release date and an increase in version number as follows:

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Introduction

The present document is not specifically written to be studied end-to-end, rather it represents a unique source of information in the aim of understanding the often very difficult and dangerous working environments, which the user community is facing, such that Industry can provide the most effective and accurate technical solutions.

1 Scope

The present document defines the initial basic requirements to be used as a basis for the elaboration of the MESA Statement of Requirements, TS 170 001 [1].

2 References

For the purposes of this Technical Report (TR) the following references apply:

- [1] ETSI TS 170 001: "Project MESA; Service Specification Group - Services and Applications; Statement of Requirements".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ECG	Electrocardiogram
EMS	Emergency Medical Services
HAZMAT	Hazardous Materials
MRI	Magnetic Resonance Imaging
OTAR	Over-The-Air-Rekeying
Rx	Receive
SoR	Statement of Requirements
Tx	Transmit

4 MESA Basic requirements

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
FOREWORD																				
a) All public protection and public safety groups included in the present document	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) General description of Project MESA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) General description of Project MESA objectives	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INTRODUCTION																				
a) The Introduction in the SoR describes the services and applications, which an advanced wireless telecommunications system should be able to support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 SCOPE																				
a) Describes a functional and technical specification and standards platform	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 REFERENCES																				
3 DEFINITIONS AND ABBREVIATIONS																				
3.1 DEFINITIONS																				
a) Conceptual Block Diagram of a Project MESA terminal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.2 ABBREVIATIONS																				
a) The definitions for common abbreviations used in the Project MESA SoR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4 THE GENERAL MISSION STATEMENTS AND TECHNOLOGY NEEDS OF EACH TYPE OF PUBLIC SAFETY DISCIPLINE AND ITS USERS																				
a) Mission Statement Overview	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Description of "base-line" requirements	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
4.1 INTRODUCTION																				
a) Describes the overall requirements of most public safety and public protection agencies in Europe and North America	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.2 GENERAL STATEMENT OF PROJECT MESA'S SoR																				
a) The technology requirements included in the Project MESA SoR will create a safer working environment for the world's public safety providers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.3 CRIMINAL JUSTICE PROVIDERS																				
a) An overview of the impact of Project MESA on community-based policing in communities previously served by patrol-based services	X	X					X	X		X	X	X		X	X	X	X	X	X	
4.4 AUTOMATED CRIMINAL HISTORY AND LAW ENFORCEMENT RECORDS SYSTEMS AND PROVIDERS																				
a) A description of the technology and application platforms needed to access new telecommunications and automation tools	X	X					X	X		X	X	X		X	X	X	X	X	X	
4.5 EMERGENCY MANAGEMENT OR DISASTER RECOVERY																				
a) A description of the Emergency Management and Disaster Recovery services needed to transparently function during routine operations and major disasters	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
4.6 SPECIAL OPERATIONS NEEDS																				
a) A description of Project MESA's vision of Special Operations and an overview of their response to events requiring specialized training				X	X	X	X	X		X						X	X		X	X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
4.7 HEALTH SERVICES																				
a) The mission of the Emergency Medical Services (EMS) is to provide critical invasive and supportive care of sick and injured citizens		X		X	X	X	X	X	X	X	X	X			X	X	X		X	X
4.7.1 EMERGENCY MEDICAL SERVICES (EMS)																				
a) An overview of EMS needs to supplement patient, medical, resource, incident, and geographical information with MESA		X		X	X	X	X	X	X	X	X			X	X	X	X		X	X
4.7.2 DISASTER MEDICINE																				
a) Describes requirements similar to EMS, yet is infrequently practiced	X	X		X	X	X	X	X	X		X	X			X	X	X		X	X
4.8 FIRE SERVICES																				
a) A description of their need to perform a variety of responsibilities and needs through access to a variety of data within the network	X	X		X	X	X	X	X	X	X					X	X			X	X
4.9 COAST GUARD SERVICES																				
a) Core functions and requirements are generally common world-wide	X	X	X	X	X		X	X	X	X	X					X	X			X
4.10 SEARCH AND RESCUE ACTIVITIES																				
a) Requires coordinated operations among diverse agencies with interoperability among them	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
4.10.1 SEARCH ACTIVITIES																				
a) An overview for geographic locations systems, resource locations systems, and search and rescue command and control operations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
4.10.2 RESCUE ACTIVITIES																				
a) An overview use of resources, technologies and skills to extricate people in distress; see clause 4.7		X		X	X	X	X	X	X	X	X			X	X	X	X		X	X

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4.11 AIRPORT SECURITY (AND RELATED SERVICES)																				
a) Describes the need for access to local and international databases, secure wireless communications							X	X	X	X						X	X			X
4.12 HUMANITARIAN ASSISTANCE																				
a) Includes emergency management, search and rescue, and other public safety disciplines	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X		X	X
4.13 HAZARDOUS MATERIALS (HAZMAT) AND RELATED SERVICES																				
a) Describes the related activities that may involve activities of many different public safety organizations; incident activities classified into four areas	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.13.1 COORDINATION AND MANAGEMENT																				
a) Describes the need for command and control, resource information, and safety and accountability and control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.13.2 ANALYSIS AND MATERIAL CLASSIFICATION																				
a) Describes the need for geographic and population information, meteorology, environmental impact, detection and analysis, and research/ databases			X				X	X	X	X			X	X	X	X	X		X	X
4.13.3 HANDLING																				
a) Describes the need for containment, fire fighting, evacuation and assistance, decontamination, treatment, and evidence collection	X	X	X				X	X	X	X			X	X	X	X	X		X	X
4.13.4 CLEANUP AND RECTIFICATION																				
a) Describes the uses and application for cleanup and forensic and criminal investigation	X	X	X				X	X		X			X	X		X	X		X	X
4.14 CORRECTIONAL INSTITUTIONS																				
a) Describes the long-term needs for prisons and correctional institutions services							X		X	X			X		X	X	X	X	X	X

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4.15 CORRECTIONAL ENFORCEMENT AND PROBATION OFFICERS																					
a) Describes specifications and standards that would be implemented on a local, institutional, or as-needed wide area basis, including nation-wide networks							X		X	X				X		X	X	X	X		
4.16 PLANNING PRECEPTS FOR RESPONSE TO LARGE PUBLIC SAFETY EVENTS AND EMERGENCIES																					
a) All public safety agencies should be prepared to respond to small- and large-scale events with effective communications tools to aid in their response	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.17 GENERAL GOVERNMENT/ADMINISTRATION NEEDS																					
a) Describes the essential communications tools necessary to fulfill their official governmental responsibilities	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.18 LAND AND NATURAL RESOURCE MANAGEMENT																					
a) Establishes the minimum telecommunications technology needed to allow them to conserve, improve, and protect natural resources and their environmental quality	X	X	X				X	X	X		X	X	X	X	X	X	X				X
4.19 TRANSPORTATION'S MANDATES AND MISSIONS																					
a) Describes the applications and platform requirement for planning, construction, management, and maintenance of transportation systems							X	X	X	X				X				X			X
4.20 INTELLIGENT TRANSPORTATION SYSTEMS (ITS)																					
a) Describes the SoR vision of an Intelligent Transportation System, its applications and platforms, for the purpose of disseminating information and monitoring transportation corridors and transport vehicles							X	X	X	X				X		X	X				X

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5 INTRODUCTION AND GENERAL TECHNOLOGY - REQUIREMENTS																					
a) Profile of operational and functional requirements contained in the SoR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.1 NEEDS																					
a) Defines needs for long-term applications and requirements as stated in the SoR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.2 IMPROVEMENTS IN SPECTRUM EFFICIENCIES																					
a) Affords immediate significant and evolutionary improvements in radio band-width allocation and use	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.3 LIFE-CYCLE PROCUREMENTS																					
a) Promotes global competition in the participant's life-cycle of technology platforms and systems	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.4 SECURITY REQUIREMENTS																					
a) Defines the need for effective, efficient, reliable and secure communications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.5 ECONOMICAL AND ERGONOMICALLY FRIENDLY DESIGN																					
a) Defines the SoR's intent to create specifications for "user friendly" equipment that will meet the needs of Project MESA users	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.6 DIGITAL MIGRATION IN PLACE																					
a) Describes a digital "migration-path" from existing public safety analog and digital systems and platforms	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.7 CONSISTENT WITH EXISTING STANDARDS																					
a) Requires any new specifications that are developed should be consistent with complete interoperability with technologies built to Project MESA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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5.8 COMPATIBLE FOR MULTIPLE INTERNATIONAL STANDARDS																					
a) Describes the requirement for Project MESA technology to be capable of transporting multiple international standards-based data protocols	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.9 TWO-WAY COMMUNICATION																					
a) Describes the need for two-way communication at all times	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.10 MULTIPLE LEVELS OF SECURITY																					
a) Defines the need for multiple levels and jurisdictionally specific types of security							X	X		X						X	X	X	X		
5.11 MULTIPLE LEVELS OF AVAILABILITY OF SERVICE																					
a) Establish the need for multiple levels and geographical and service-specific systems	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.12 END-TO-END NETWORK INTEGRITY																					
a) Ensure the full integrity of any public safety system or network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.13 HIGH-SPEED, ERROR-FREE SERVICE																					
a) Describes the need for the rapid transmission of all potential data applications through environmental conditions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.14 SYSTEM AND NETWORK ACCESS																					
a) Defines the need for the technology to be capable of switching and transferring multiple applications from multiple MESA user devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5.15 COMPLIANT WITH THE NEED OF PARTICIPATING NATIONS																					
a) Defines the need for the specifications to comply with the specific baseline requirements of the national governments that are active with the Project MESA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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6 GENERAL, FUNCTIONAL, AND OPERATIONAL																					
a) Provides the baseline functional and operational requirements embodied in the Project MESA SoR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.1 REQUIREMENTS OF THE PROJECT MESA SoR																					
a) Defines the need for the creation of universal specifications and standards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.2 INTERFACE REQUIREMENTS																					
a) Defines the need for the Project MESA specification to provide for a direct interface to various local, wide area, and national data platforms and applications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.3 TRANSPARENT INTERFACES																					
a) Defines the need for interfaces that are transparent to the wireless network and the network being interfaced	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.4 END-TO-END TRANSMIT TIME																					
a) Defines end-to-end transmit time should be less than 400 milliseconds	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.5 INTERFACE PROTOCOL REQUIREMENTS																					
a) Notes that MESA SoR specifications could apply USA IEEE 802 Series protocols	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.6 DYNAMIC PARTITIONING																					
a) Stipulates that the Project MESA SoR include requirements for providing for the capability of dynamic partitioning of the networks	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.7 HIGH-SPEED SIMULTANEOUS NETWORK OR SYSTEM ACCESS																					
a) Stipulates the need for Project MESA specifications to provide high-speed simultaneous access to multiple networks or host computers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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6.8 NETWORK PRE-EMPTION																				
a) Defines the requirement for the MESA specifications to support prioritization of access and routing, and allow for dynamic or forced pre-emption				X	X	X	X	X	X	X						X	X		X	X
6.9 FIRST-IN, FIRST-OUT (FIFO)																				
a) Accepts a SoR criteria that allows for access on a "first-in - first-out" basis, except as may otherwise be specified.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.10 TRANSPARENT TRANSFER																				
a) Establishes a requirement for seamless transfer of MESA user devices moving between MESA cells	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.11 OVER-THE-AIR-REKEYING (OTAR)																				
a) Defines the need for Over-The-Keying and multiple levels of encryption				X	X	X	X	X	X	X						X	X		X	X
6.12 AUTOMATED INFORMATION REQUIREMENTS																				
a) Defines the need for Project MESA specifications to accommodate access to each nation's specific automated security requirements	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.13 BLOCKING UNAUTHORIZED ACCESS																				
a) Requires Project MESA specifications to have the ability to block access by unauthorized users	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.14 MESA NETWORK COMPONENT IDENTIFICATION																				
a) Outlines the need for MESA specifications to have the capability of automatically identify all appropriate MESA switches, routers, and user devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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6.15 OPTIONAL SITE-BY-SITE IMPLEMENTATION AND MANAGEMENT																					
a) Defines how a Project MESA network management system may allow for the user(s) implementing and managing network components on a site-by-site basis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.16 DYNAMIC REMOTE PARTITIONING																					
a) Requires the Project MESA specifications to include the capability of remotely partitioning system band-width	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.17 SYSTEM AND/OR NETWORK TRANSACTION AUDIT TRAIL																					
a) Outlines the requirements for MESA specification to include the option of creating an audit trail of all transactions; protected by authorization codes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.18 ABILITY TO PROVIDE STATISTICAL REPORTS																					
a) Defines the need for Project MESA users to be able to easily access operational and performance management information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.19 AGENCY-BY-AGENCY AND SITE-BY-SITE REPORTS																					
a) Articulates the need for management system that allows for traffic, usage, and performance reports to be generated	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.20 DYNAMIC TRANSFER RATES AND BAND-WIDTH ALLOCATION																					
a) Establishes the need for a dynamic information transfer rate by means of adaptive radio frequency modulation and error detection and correction coding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.21 DEGRADATION AND REDUNDANCY																					
a) States that user expects the MESA specifications to provide "graceful system or network degradation" and/or complete redundancy when required	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
6.22 DUTY CYCLE REQUIREMENTS																				
a) Establishes technology requirements that ensure the equipment used is capable of and rated for a 100 % duty cycle	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.23 PRE-TESTING TECHNOLOGY PROPOSALS																				
a) Requires that any technologies proposed should be tested before their inclusion as a specification or standard	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.24 COMPLIANCES WITH NATIONAL AND INTERNATIONAL RULES, REGULATIONS AND STANDARDS																				
a) Establishes that all MESA specifications must meet or exceed all applicable national minimum performance standards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.25 HIGH-SPEED ACCESS TO NATIONAL DATABASES																				
a) Stipulates that the MESA specifications will provide high-speed access to each user's specified applications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7 TECHNOLOGY AND APPLICATIONS																				
a) Outlines the anticipated technologies and applications that will be associated with a Project MESA compliant specification	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.1 REQUIREMENTS OF THE USERS																				
a) Establishes the requirement for transfer of multiple digital applications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Outlines the need to use and be compatible with existing protocols	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Defines the requirement for In-building service						X	X	X	X	X						X	X	X	X	X
d) Defines the requirement for portable service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Outlines a criteria for regional and national interoperability	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
f) Stipulates the requirement for interoperability between MESA user devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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7.2 USE OF STANDARDIZED TECHNOLOGY																				
a) Encourages the use of specifications and standards that use standardized technology	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.3 USE OF OPEN ARCHITECTURES																				
a) Encourages the adoption of specifications that take advantage of open-system architecture and design approach	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.4 MIGRATION																				
a) Outlines the need to use network strategies that encourage a transparent migration path	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.5 SERVICE PLATFORM																				
a) Establishes the requirement for the specification to accommodate both on-net and off-net services and applications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.6 PRIORITY SERVICES																				
a) Outlines the need for users that typically would require prioritized levels of services		X		X	X	X	X	X	X	X				X	X	X	X		X	X
b) Outlines the need for users that typically would have a secondary priority level of services	X		X								X	X	X					X		
7.7 TRAFFIC (DATA) DISTRIBUTION																				
a) Outlines the requirement for multiple levels of point-to-point and point-to-multipoint transmission and transfer of data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.8 NETWORK AND DATA BASE INTERCONNECTIVITY																				
a) Establishes basic connectivity requirements to allow connecting to, or interconnecting with, all known public safety databases	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.9 DYNAMIC NETWORK OPTIMIZATION																				
a) Notes the specifications are required to provide for and allow dynamic network optimization	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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7.10 FREQUENCY NEUTRAL TECHNOLOGY																					
a) Establishes that specifications and standards shall be frequency neutral	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.11 ADEQUATE INTERFERENCE PROTECTION																					
a) Outlines the requirement that the specifications be developed to ensure an adequate level of interference protection to and from adjacent systems and/or channels	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.12 REGULATORY COMPLIANCE																					
a) Establishes the requirement that the specifications are in full compliance with existing European and North American, or other national's or international's, regulatory rules and regulations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.13 ENVIRONMENTALLY SAFE																					
a) Establishes requirement that the specifications will be written for technology that is virtually free from harmful interference with the public safety technology tools and the public safety officials that use them	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.14 NON-PUBLIC USE OF PROJECT MESA SPECIFICATIONS AND STANDARDS																					
a) Stipulates that the SoR is written for the specific use of meeting the needs of public safety agencies, but they do not preclude use by other sectors of Government or business	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.15 COMPLIANCE WITH PROJECT MESA SoR																					
a) Defines the requirement to include the full consideration and acceptance of the present document	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.16 OPEN INTERFACES																					
a) Provide clearly definable requirement for an open interface from the wireless MESA technology to the other end user technologies and application platforms	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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7.17 RELATED DOCUMENTS, STANDARDS, POLICIES OR REQUIREMENTS																					
a) Establishes the need for the specifications to embody the work previously done by other applicable national and international agencies as much as possible	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.18 NETWORK TRANSMISSION REQUIREMENTS																					
a) Describes the technology required to meet the needs of the public safety community	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7.19 LOCATION DETERMINATION																					
a) Establishes the criterion that MESA specifications will include technology that would accommodate geographical position-locating capability	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Establishes the criterion that MESA specifications will include technology that would accommodate geographical position-locating capability inside a building, below and above ground							X	X	X	X						X	X	X	X	X	X
7.20 DELAYED TRANSMISSION AND REMOTE STOPS																					
a) Requires that MESA specifications must be capable of delayed transmission and/or remote store and forward	X						X	X	X	X				X		X	X		X	X	X
7.21 NETWORK AND UNIT RESPONSE TIME																					
a) Outlines the requirement that MESA specification will support full two-way operation to accommodate the implementation of "smart" systems	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8 THE USE OF TECHNOLOGIES AND THE COMPATIBILITY REQUIREMENT FOR THE VARIOUS APPLICATIONS																					
a) Establishes requirements for interface compatibility to a multitude of technologies and applications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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8.1 DATA TO BE TRANSPORTED																				
a) Describes the requirements for the Project MESA specifications to comply with the SoR's basic requirement for transfer and display of data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.2 GENERAL																				
a) Establishes requirements for specifications to provide flexible platform that allows field computers to remotely access automated information systems	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Creates a baseline requirement and understanding that radio and computer equipment may be vehicle-mounted or hand-held unit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Establishes a clear understanding that MESA specifications will include the capabilities to minimize RF network data and messaging routing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.3 ELECTRONIC MESSAGING																				
a) Required messaging - Status and control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Required messaging - Smart Card	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Required messaging - Transmission of monitoring information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Required messaging - Reception of monitoring information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Required messaging - Paging, inbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
f) Required messaging - Paging, outbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
g) Required messaging - Encrypted, outbound/Inbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
h) Required messaging - Inbound panic button							X	X	X					X		X	X	X	X	X
i) Required messaging - Control signs, outbound/inbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
j) Required messaging - Electronic bulletin boards, outbound/inbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
k) Required messaging - Control electronic street signs, outbound/inbound							X	X	X							X	X	X	X	X

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l) Required Messaging - Control traffic signals, outbound/inbound							X	X	X							X	X	X	X	X
m) Required messaging - Transmission of reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
n) Required messaging - Reception of reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
o) Required messaging - Transmission, authentications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
p) Required messaging - Reception, authentications	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
q) Required messaging - Transmission, command and control functions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
r) Required messaging - Reception, command and control functions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
s) Required messaging - Outbound emergency alert		X					X	X	X	X				X	X	X				X
t) Required messaging - Inbound emergency alert		X					X	X	X	X				X	X	X				X
u) Required messaging - Field device/subscriber unit Input - terminal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.4 ENCRYPTION																				
a) Required messaging - Transmission, encrypted data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Required messaging - Reception, encrypted data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Required messaging - Transmission, encrypted voice	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Required messaging - Reception, encrypted voice	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Required messaging - Paging, inbound	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
f) Required messaging - Transmission, encrypted video	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
g) Required messaging - Reception, encrypted video	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
h) Requires MESA specifications support transparent, secure access to governmental files	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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8.5 OFFICE OF THE FUTURE																					
a) Requires remote wireless access to voice, video and data application files	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires remote wireless access to a variety of networks and host processors	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.6 TRANSPARENT NETWORK AND SYSTEM ACCESS																					
a) Requires MESA specifications will provide transparent interface for Tx - Rx data from other networks and services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires MESA specifications will provide transparent interface capable of direct point-of-entry services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Requires MESA specifications will provide transparent high-speed access to multiple hosts and networks	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Requires MESA specifications will provide transparent access to client-server networks	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.7 ITS SYSTEM REQUIREMENTS																					
a) Requires Project MESA specifications provide emergency vehicle tracking		X					X	X	X	X				X						X	
b) Requires Project MESA specifications provide emergency vehicle routing and guidance		X					X	X	X	X				X	X	X				X	
c) Requires Project MESA specifications provide In-vehicle signaling							X	X						X	X	X				X	
d) Requires Project MESA specifications provide driver and personnel security information and status							X	X							X						
e) Requires Project MESA specifications provide automated collision notification							X	X	X	X				X		X	X			X	
f) Requires Project MESA specifications provide in-route driver information, updates	X	X					X	X	X					X		X	X				

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g) Requires Project MESA specifications provide in-vehicle signing							X	X		X				X							
h) Requires Project MESA specifications provide Tx - Rx Incident detection and management information							X	X						X				X	X	X	
i) Requires Project MESA specifications provide Tx - Rx Traffic flow and volume data							X	X		X				X			X	X	X		
j) Requires Project MESA specifications provide Tx - Rx Mass transit equipment and status data							X	X		X						X					
k) Requires Project MESA specifications provide Tx - Rx Priority treatment for transit							X	X	X	X						X					
l) Requires Project MESA specifications provide Tx - Rx Data from public security devices and cameras	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
m) Requires Project MESA specifications provide Tx - Rx Vehicle inspection data							X	x	x	x				X		X	X				
n) Requires Project MESA specifications provide Tx - Rx Vehicle weight information							X	X		X				X		X	X				
o) Requires Project MESA specifications provide Tx - Rx Vehicle classification data							X	X		x				X		X	X	X	X		
p) Requires Project MESA specifications provide Tx - Rx Vehicle security clearances							X	X		X				X		X	X				
q) Requires Project MESA specifications provide Tx - Rx Electronic clearance							X	X		X				X		X	X	X	X	X	X
r) Requires Project MESA specifications provide Tx - Rx Data on equipment, vehicle safety and wellness	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X				
s) Requires Project MESA specifications provide Tx - Rx Data on hazardous material detection							X	X	X	X				X		X	X		X		
t) Requires Project MESA specifications provide Tx - Rx Data on collision avoidance	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X				

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u) Requires Project MESA specifications provide Tx - Rx Safety readiness	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X			
v) Requires Project MESA specifications provide Tx - Rx Data on restraint equipment deployment	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				
w) Requires Project MESA specifications provide Tx - Rx Automated highway system check-in	X	X	X			X	X	X	X	X	X	X	X	X	X	X				
x) Requires Project MESA specifications provide Tx - Rx Data of railway crossing safety equipment						X	X	X	X	X				X		X				
y) Requires Project MESA specifications provide emergency vehicle status							X	X	X	X				X		X	X	X	X	X
z) Requires MESA specifications will provide transparent Tx - Rx Short-range aids to navigation	X	X		X	X	X	X	X	X	X					X	X				
aa) Requires MESA specifications will provide transparent Tx - Rx vessel identification and position							X	X	X	X				X		X				
bb) Requires MESA specifications will provide transparent dissemination of information on coastal water, icy conditions			X	X	X	X	X	X						X		X	X		X	
8.8 TRANSMISSION OF COMPLEX FILES																				
a) Requires Project MESA specifications provide Tx - Rx Complex spread sheets	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X
b) Requires Project MESA specifications provide Tx - Rx Complex floor plans							X	X	X	X						X				X
c) Requires Project MESA specifications provide Tx - Rx Complex diagrams	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
d) Requires Project MESA specifications provide Tx - Rx Complex chemical data		X						X	X	X						X				
e) Requires Project MESA specifications provide Tx - Rx Complex engineer drawings	X	X	X					X		X			X	X		X	X	X	X	X

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f) Requires Project MESA specifications provide Tx - Rx Environmental data	X	X	X	X	X	X		X		X	X	X	X	X	X	X				X
g) Requires Project MESA specifications provide Tx - Rx Hazardous material data and location							X	X	X	X				X		X	X	X	X	X
h) Requires Project MESA specifications provide Tx - Rx Electronic images	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X
i) Requires Project MESA specifications provide Tx - Rx Complex graphic depictions, drawings and diagrams	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
j) Requires Project MESA specifications provide Tx - Rx High-resolution still, color, black and white photos							X	X	X	X						X		X	X	X
k) Requires Project MESA specifications provide Tx - Rx High-resolution aerial color, black and white photos	X	X	X			X	X	X	X		X	X	X	X	X	X		X	X	X
l) Requires Project MESA specifications provide Tx - Rx Full-motion color and black and white video		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
m) Requires Project MESA specifications provide Tx - Rx Complex building electrical plans							X	X	X	X									X	X
n) Requires Project MESA specifications provide Tx - Rx Complex building plumbing plans		X					X	X	X	X						X			X	X
o) Requires Project MESA specifications provide Tx - Rx Complex building and structural plans							X	X	X	X				X		X			X	X
p) Requires Project MESA specifications provide Tx - Rx Complex electrical schematic						X	X	X		X			X	X		X				X
q) Requires Project MESA specifications provide Tx - Rx Building heating, A/C and ventilation plans						X	X	X	X	X						X			X	X
r) Requires Project MESA specifications provide Tx - Rx Complex maps of public and private water lines						X	X	X	X	X						X			X	X
s) Requires Project MESA specifications provide Tx - Rx Complex maps of public and private sewer lines			X			X	X	X	X	X						X	X	X	X	X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
t) Requires Project MESA specifications provide Tx - Rx Complex maps of public and private gas lines						X	X	X	X	X				X		X	X	X	X	X
u) Requires Project MESA specifications provide Tx - Rx Complex maps of public and private power lines	x					x	X	X	X	X				X		X	X		X	X
v) Requires Project MESA specifications provide Tx - Rx Complex maps of public and private telecommunication lines	x					x	X	X	X	X				X		X	X		X	X
w) Requires Project MESA specifications provide Tx - Rx Complex building fire protection plans						X	X	X	X	X						X	X	X	X	X
x) Requires Project MESA specifications provide Tx - Rx location system data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
y) Requires Project MESA specifications provide Tx - Rx Complex, multi-point fingerprint data							X									X	X	X	X	X
z) Requires Project MESA specifications provide Tx - Rx Complex iris scan data							X									X	X	X	X	X
aa) Requires Project MESA specifications provide Tx - Rx Complete air and water quality data	X	X	X					X	X	X	X	X	X		X	X	X		X	X
bb) Requires Project MESA specifications provide Tx - Rx Infrared photos	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
8.9 SYSTEM INTEGRATION AND INTEROPERABILITY																				
a) Requires Project MESA specifications provide transparent interoperability w/multiple public safety users	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
b) Requires Project MESA specifications provide ubiquitous disaster management and control within system/network coverage area	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
c) Requires Project MESA specifications provide a high-level of redundancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
d) Requires Project MESA specifications provide "Graceful" or "Soft" system and Network degradation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
8.10 TRANSMISSION OF USER OR PATIENT MONITORING TELEMETER																				
a) Requires Project MESA specifications provide Tx - Rx ECG				X	X	X	X	X	X						X	X	X		X	
b) Requires Project MESA specifications provide Tx - Rx MRI				X	X	X	X		X						X	X	X		X	
c) Requires Project MESA specifications provide Tx - Rx Bi-medical information				X	X	X	X	X	X				X		X	X	X		X	
8.11 OTHER PUBLIC SAFETY TELEMETRY APPLICATIONS																				
a) Requires Project MESA specifications provide Tx - Rx Data relating to environmental changes	X	X		X	X			X		X	X	X	X	X	X	X	X		X	X
b) Requires Project MESA specifications provide Tx - Rx Data relating to seismic movements	X	X	X				X	X	X	X			X	X	X	X	X			X
c) Requires Project MESA specifications provide Tx - Rx Data relating to water levels in dams	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			X
d) Requires Project MESA specifications provide Tx - Rx Data relating to water flow in rivers	X	X	X		X	X	X	X	X		X			X	X	X	X			X
e) Requires Project MESA specifications provide Tx - Rx Data relating to ocean-tide levels				X			X	X	X	X				X	X	X	X			X
f) Requires Project MESA specifications provide Tx - Rx Data relating to wind velocity	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X			X
g) Requires Project MESA specifications provide Tx - Rx Data relating to weather changes	X	X	X	X	X	X	X	X	X	X	X	XX	X	X	X	X	X		X	X
h) Requires Project MESA specifications provide Tx - Rx Data on snow levels, snowpack density and water content	X	X	X		X	X	X	X	X		X	X	X	X		X	X			X
i) Requires Project MESA specifications provide Tx - Rx Data relating to snow runoff	X		X										X			X	X			X
j) Requires Project MESA specifications provide Tx - Rx Data relating to road-surface temperature								X	X	X			X			X	X			X

	LAND MANAGEMENT/CONSERVATION	FORESTRY	WATER MANAGEMENT	OCEAN RESCUE	SWIFT WATER RESCUE	SEARCH and RESCUE	LAW ENFORCEMENT	FIRE	EMERGENCY MEDICAL	HAZARDOUS MATERIALS	FISH and GAME	WILDLIFE MANAGEMENT	ENERGY and NATURAL RESOURCES	TRANSPORTATION	PARKS and RECREATION	MILITARY and DEFENSE	NATIONAL SECURITY	COURTS and JUDICIARY	CORRECTION PROBATION	CRITICAL INCIDENT MANAGEMENT
k) Requires Project MESA specifications provide Tx - Rx Data relating to bridge-surface conditions										X			X			X	X			X
l) Requires Project MESA specifications provide Tx - Rx Data relating to road-surface conditions							X	X	X		X	X		X	X	X	X			X
m) Requires Project MESA specifications provide Tx - Rx Data relating to air quality	X		X										X			X	X		X	X
n) Requires Project MESA specifications provide Tx - Rx Data relating to water quality			X				X	X	X				X	X		X	X		X	X
o) Requires Project MESA specifications provide Tx - Rx Data relating to well or storage water quality and volume			X	X	X			X	X		X		X	X		X	X			X
p) Requires Project MESA specifications provide Tx - Rx Data relating to bridge or building structural integrity							X	X	X	X			X	X		X	X		X	X
q) Requires Project MESA specifications provide Tx - Rx Data relating to chemical integrity, heat and cooling levels							X	X		X			X			X	X		X	X
r) Requires Project MESA specifications provide Tx - Rx Data from game, fish and wildlife monitors											X	X			X					
s) Requires Project MESA specifications provide Tx - Rx Data relating to rainfall	X	X	X		X	X	X	X			X		X	X		X	X		X	X
t) Requires Project MESA specifications provide Tx - Rx Data relating to dust storms							X	X	X							X	X		X	X
u) Requires Project MESA specifications provide Tx - Rx Data relating to search and rescue operations				X	X	X	X	X	X	X						X	X			X
v) Requires Project MESA specifications provide Tx - Rx Train wellness, operation and signing information							X	X	X					X		X	X			X
w) Requires Project MESA specifications provide Tx - Rx Data from heat, audio or movement sensors							X	X	X	X	X	X		X		X	X	X	X	X
x) Requires Project MESA specifications provide Tx - Rx Tracking information of game, fish and wildlife											X	X								

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y) Requires Project MESA specifications provide Tx - Rx Sewage line flow			X				X			X				X		X	X		X	X
z) Requires Project MESA specifications provide Tx - Rx Sewage plant capacity										X	X	X	X	X	X	X	X		X	X
aa) Requires Project MESA specifications provide Tx - Rx Sewage plant wellness			X			X			X	X			X	X	X	X	X		X	X
bb) Requires Project MESA specifications provide Tx - Rx Tracking information from fixed measuring points	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.12 TRANSMISSION OF GEOGRAPHICAL LOCATION DATA																				
a) Requires Project MESA specifications provide Tx - Rx Tracking information for vehicles	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires Project MESA specifications provide Tx - Rx Tracking information for personnel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Requires Project MESA specifications provide Tx - Rx Tracking information for equipment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Requires Project MESA specifications provide Tx - Rx Global positioning system data (GPS)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Requires Project MESA specifications provide Tx - Rx Complex topographical maps	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.13 ITS VIDEO REQUIREMENTS																				
a) Requires Project MESA specifications provide Tx - Rx Video from building, grounds and institutions for security	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires Project MESA specifications provide Send and receive multiple video signals simultaneously	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Requires Project MESA specifications provide one-way transmission of video		X					X	X	X	X				X	X	X	X	X	X	X

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8.14 TRANSMISSION OF FULL-MOTION VIDEO																					
a) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from fixed point	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from mobile or portable	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from moving mobile or portable	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from during a high-speed pursuit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from undercover/surveillance site	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
f) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from harsh RF environment								X	X	X	X			X		X	X		X	X	
g) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from airborne platform								X	X	X	X			X		X	X		X	X	
h) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from subscriber units								X	X	X	X			X	X	X	X		X	X	
i) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from fixed base units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
j) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from fixed base to subscribers	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
k) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from subscriber units to fixed base	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
l) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from one or more subscribers	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X
m) Requires Project MESA specifications provide Tx - Rx Full-motion video to/from one or more fixed bases	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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n) Requires Project MESA specifications provide Tx - Rx Full-motion video point-to-point and point-to-multiple point	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.15 ROBOTIC WITH FULL-MOTION VIDEO																				
a) Defines the need for technology that can be used in remote guidance of wireless robotic			X			X	X	X	X	X				X	X	X	X		X	X
b) Defines the need for technology that can be used with on-board (internal) microphones and speakers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Defines the need for MESA technology to provide remote vehicle control - tilt, speed, height, angle	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Defines the need for MESA technology to provide remote camera control - focus, tilt, pan, zoom and aperture	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Requires Project MESA specifications provide Tx - Rx Subcarrier data from robotics			X			X	X	X	X	X				X	X	X	X		X	X
f) Requires Project MESA specifications provide Tx - Rx Data uploads and downloads	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
g) Requires Project MESA specifications provide Tx - Rx Equipment placed at least 1 000 feet from robotic device	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
h) Requires Project MESA specifications provide Tx - Rx Full-motion video through robotic cameras	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
i) Tx - Rx Able to penetrate difficult environment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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8.16 TRANSMISSION OF STILL PHOTOGRAPHS AND IMAGES VIDEOS																					
a) Requires Project MESA video technology be capable of transmitting real time/full-motion, color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b) Requires Project MESA video technology be capable of receiving real time/full-motion, color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Requires Project MESA video technology be capable of transmitting real time/full-motion, black and white	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
d) Requires Project MESA video technology be capable of receiving real time/full-motion, black and white	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Requires Project MESA video technology be capable of transmitting slow scan, color video	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
f) Requires Project MESA video technology be capable of receiving slow scan, color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
g) Requires Project MESA video technology be capable of transmitting slow scan, black and white	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
h) Requires Project MESA video technology be capable of receiving slow scan, black and white	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

History

Document history		
V3.1.1	December 2002	Publication