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Working Group on Sensor Networks

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NC	Clse	P	GTE	COMMENT	Proposed change	SEC
			G	Sensor Networks, Control Networks, and Management Networks exist for different purposes and the distinction needs to be clearly made in this document. Sensor Networks [SN's] collect data from sensors and make it available to interested parties. They may also provide transport services for other entities having suitable interfaces or gateways. Control networks include sensors, actuators and their related control functions. In general the internal operation of a controller and control network is time-critical and should not be disturbed by external agents. Management Networks support general services and operations within organizations. They may also provide transport services for other entities having suitable interfaces or gateways. Management Networks, Control Networks and Sensor Networks, can inter-communicate and share information through appropriate gateway or interface functions that prevent disturbance to communication on the control side of any gateway or interface. If SN's or Management networks want data from a controller or control network, they must request it from a suitable gateway or interface. SN's may be used to transfer between connected management agents and gateway/interface functions for controllers, control networks, and their contained actuators. In this case the SN is bounded on one side by the management gateway/interface and on the other side by the gateway/interface to the controller or control network. A good example of this is a SCADA network which combines Management network functions with Sensor Network functions and Control Network functions. SCADA networks provide Supervisory Control and Data Acquisition. They can be decomposed into a Sensor Network with interfaces/gateways to Management entities and interfaces/gateways to Control entities. Management entities may use their SN interface to collect data from the SN and to convey management instructions to control interfaces/gateways which are also attached to the SN.	Clarify the distinction between Sensor Networks, Control Networks, Management Networks and SCADA networks.	

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			GT	The examples and use cases all refer to data collected and processed for open applications. This is not applicable for any control or actuation applications which must always be closed for reasons of safety, security and performance. Clause 4.2.3 says that the target user of the 29182 standard are 'arbitrary consumers and business partners' . This requirement is not true for Control and Automation networks which are always installed for specific applications, customers and business partners.	Remove coverage of actuators and control applications from all parts of the definition and scope of the sensor network standard	
	3.4		T	Home utility control, industrial automation are control applications, they are not Sensor network applications For safety reasons, control functions must always be separate from sensor network applications and any communication between the different networks must use a suitable gateway or protected interface.	Remove references to Control and to Industrial Automation.	
	3.5		T	Clarify that an SN can include an interface or gateway to a controller or control network BUT performance of the control application must be independent from the Sensor Network.	Sensor network device A sensor node, or a gateway to a separate controller or control network containing management interface functions for its sensors, actuators and control functions.	
	3.6		T	Don't understand 'backend system'	Define backend system	
	3.9	2	T	The widely accepted industrial term for nodes and networks that operate actuators are control nodes or control networks. If entities in a ubiquitous sensor network wish to interact with nodes and networks containing actuators, this should only be done through gateways or interfaces to ensure that internal communication in the control node or control network are not compromised.	sensor node A device with capabilities of sensed data processing and networking, consisting of sensor(s) and **optionally interfaces to controllers and control networks containing actuator(s)** Note 1. External connections to controllers and control networks are typically done through a gateway or interface function able to manage external data requests and management commands relating to the connected control network and its devices. Note 2. Actuators and their control channels should not be connected directly to an external network as traffic on their local communication channel can disturb local control functions leading to serious safety problems.	
	4.1.1	Table 1		Open access to control street lights is not safe and not secure. SNs must communicate to streetlight controls or any other actuation function by use of appropriate management interfaces.	Change 'streetlight control' to 'street light management'.	

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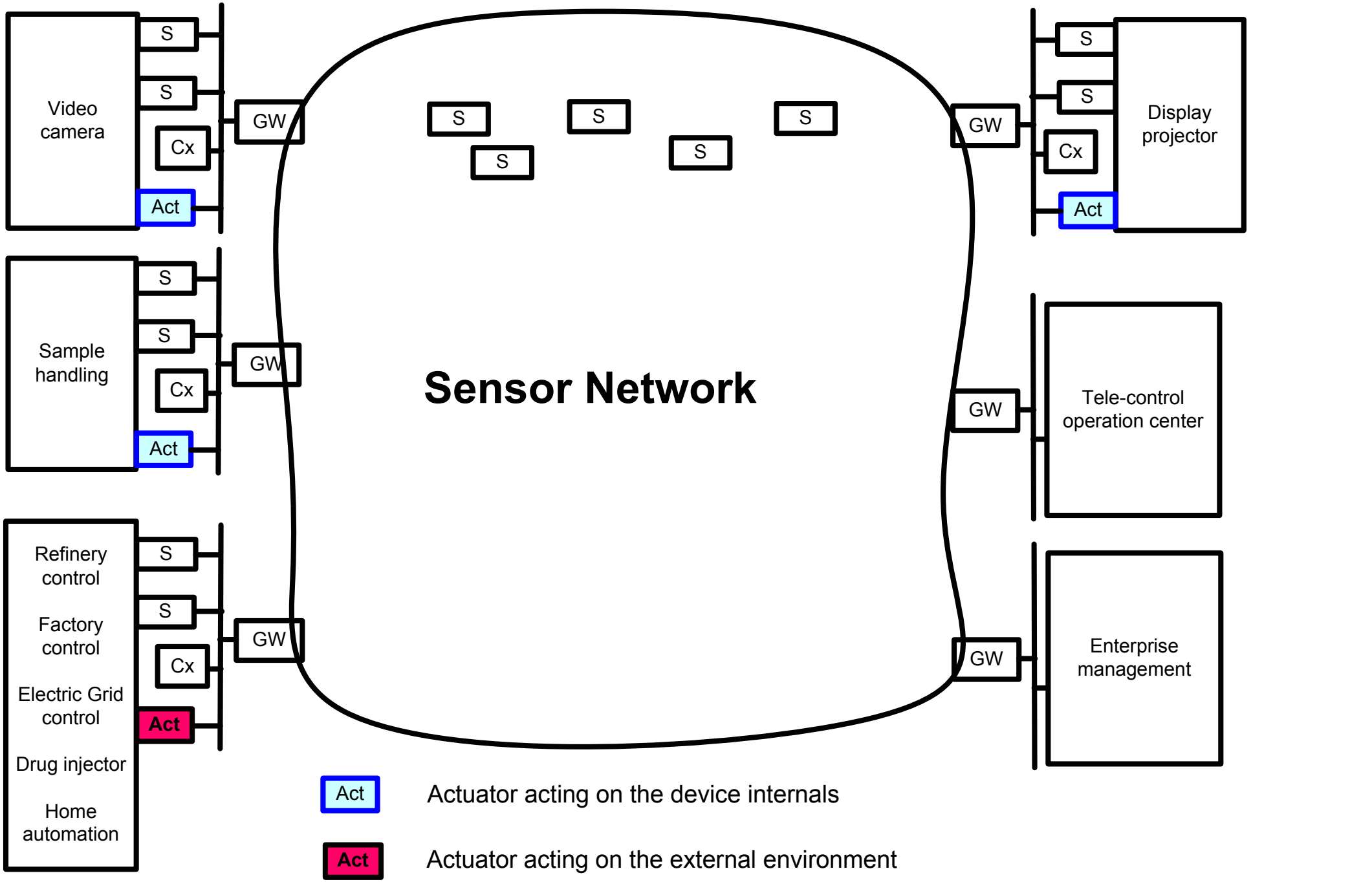
	4.2		e	Hanging clause.	Fix hanging clause	
	4.2		t		Remove text Automation (sense and actuate)	
	4.2.1		g	This clause is confusing and incorrect to claim that a designer ignores the customer for his work and the consumer of his data. There are no reasons given to justify the assertion that a supplier of any system should be forced to add cost and suffer a performance penalty for the potential interest of any third party.	Revise to improve clarity Remove the references to Control.	
	4.2.2		t	This clause implies without justification that the exclusivity of existing control networks needs to change for the future.	Explain that control and automation networks will always be are exclusive and for valid reasons of security and safety.	
	4.2.3		t	This clause says that the target user of the 29182 standard is an arbitrary consumer . This requirement is not true for Control and automation networks which are never installed for arbitrary customers and business partners. This justifies complete removal of actuators and control applications from all parts of the definition and scope of the sensor network standard	Remove actuators and control applications from all parts of the definition and scope of the sensor network standard	
	4.2.3		e		Explain and define B2B network services and B2C	
	4.2.8				Must =. may	
	6.1				For reasons given above, remove actuators	
	6.2.1				For reasons given above, remove actuators and the Actuator interface in the table. Alternatively consider a Note: Actuators and sensors involved in controls are normally contained in closed networks to prevent external messages from blocking time-critical control functions. Activation of actuators from an external agent is typically done by issuing set-point requests or management requests to a suitable gateway or management interface.	



S = sensor Act = Actuator Cx = Control function

Sensor Network examples GW v1