

## Annexure-A

### 1. Camera Specifications

<b>Certifications</b>	<b>EN50155</b> <b>EN61373</b> <b>EN 45545-2</b> <b>Impact protection: IK08 or better</b> <b>Ingress protection: IP67 for External and IP54 for internal</b> Bidders need to submit certificate of compliance for above from the respective OEM on their letter heads.
Camera Type	Wall mounted
Image sensor	1/3" progressive scan RGB CMOS
Minimum illumination	0.2 lux@F2.0, AGC on 0 lux with IR
Lens	4 mm @F2.0, angle of view: 87° (horizontal), 50° (Vertical) or better (2.8mm, 6mm optional)
Shutter Time	1/30s ~ 1/100,000s
Lens mount	M12
Backlight Compensation	Yes, zone configurable
Dimensions	65x135x59mm or smaller
<b>Compression Standard</b>	
Video Compression	H.264/MJPEG or better
Bit rate	32 Kbps ~ 16Mbps
<b>Image</b>	
Max. Image resolution	1600x1200 adjustable
Frame rate	1280x720, 50Hz: /25 FPS (minimum frame rate)
Image settings	Saturation, Color, Sharpness, Brightness, Contrast, White balance, Exposure control, Exposure zones, Wide Dynamic Range-dynamic contrast, Fine tuning of behavior at low light, Rotation: 0°, 90°, 180°, 270° including Corridor format, Text and image overlay, Privacy mask, Mirroring of images, Traffic Light mode (RS13) adjustable through client software or web browser.
<b>Network</b>	
Protocols	TCP/IP, Http, DHCP, DNS, DDNS, RTP, RTSP, PPPoE, SMTP, NTP, SNMP, HTTPS, FTP, 802.1x, QoS
General functionalities	Flicker-less, Dual stream, heartbeat, mirror, user authentication, video mask, watermark, integrated mic for audio recording.
System Compatibility	ONVIF Profiles S & G (Ref. RS13)
<b>Interface</b>	
Communication Interface	<b>M12:</b> Rugged, Female, D-coded or X-Coded M12 connector with fast push pull locking mechanism as available in Harting Make Connectors. All connectors support Power over Ethernet.
<b>General</b>	
Operating conditions	-30 °C ~ 70 °C ; humidity 100% or less (non-condensing)
Power supply	DC 12V ± 10%, PoE Enabled (IEEE 802.3af)
Power consumption	Max. 7W

Noise Cancellation	3D Digital Noise Reduction.
Alarm Trigger	Network Disconnect.
Impact protection	IEC60068-2-75Eh, 50J; EN50102, up to IK10
IR range	Upto 10 mtr
Housing	Vandal-proof housing
Camera Angle Adjustment	Pan: $\pm 30^\circ$ Tilt: 15-90° Rotation: $\pm 175^\circ$
Video Streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Controllable frame rate and bandwidth HBR/ MBR H.264 (Ref. RS13)
<b>Make</b>	Hikvision, Dahua, Vacron, Telvic Rail or any other make of equivalent specifications.

## 2. HMI Specifications

Display	10.4” <b>TFT touch-screen</b> display
Resolution	<b>1280*720 orbetter</b> (Shallbecompatiblewithproposedcamera in allrespects)
Space available for fitment	350X250X63.1mm(Shouldbepossibletofitinexistingspace)
Certifications	<b>EN50155</b> <b>EN61373</b> <b>EN 45545-2</b> Biddersneedtosubmitcertificateofcomplianceforthe above fromtherespectiveOEMONtheirletterheads.
Make	Advantech, Kontron, Axiomtek, AMiT or any other make of equivalent specifications.

## 3. NVR Specifications

Video Input	IP video input	8 - ch.PoE supported
	IncomingBandwidth	Gigabit
Video output	Recording resolution	1280P/720P
Decoding	Live view	All Cameras
	Synchronous Playback	1 Ch.
Hard disc	Type	SSD hard disc with minimum 15 days recordingfeature.It shall be suitable for heavy duty rail based CCTV application. The tenderer will have to submit necessary certification for above from respective OEM on their letterheads.

	Hard disc lock	Lock/unlock of the hard disc box
	Hard disc box	Insert SSD surveillance hard disc for data storage
	Installation	Pluggable
	Backup	Hard disc box, USB interface and eSATA interface supporting data backup.
Downloading	Contractor will propose a methodology to download CCTV data and supply required software.	
Internal Interface	Network Interface	10M/100M/1000M self-adaptive Ethernet interface with M12 connector
	PoE	M12 connector Rugged, Female, D-coded or X-Coded M12 connector with fast push pull locking mechanism as available in Harting (Make) Connectors.
	Firmware interface	USB port
	eSATA interface	1
	USB interface	1 x USB 2.0
Size	250X205X90mm or less (Should be possible to fit in existing available space)	
Certifications	<b>EN50155</b> <b>EN61373</b> <b>EN 45545-2</b> Bidders need to certify the compliance of above standards from respective OEM on their letter heads.	
Indicator	Power indicator	Light In GREEN after device starts up; Light in RED when device standby.
	Ready Indicator	Light In GREEN after device starts up properly.
	Record indicator	Light In GREEN recording; Light Off when all recording channels are abnormal
	Network indicator	Light In GREEN when the network connection is normal.
	Failure of any camera	Indication/display of status on NVR for the respective camera.
Make	Hikvision, Dahua, Vacron, Telvic Rail or any other make of equivalent specifications.	

#### 4. PoE Switch Specifications

Interface	M12 Connector, 10M/100M or 10M/100M/1000MPOE port (fully compatible with proposed system)
Certifications	<b>EN50155</b> <b>EN61373</b> <b>EN 45545-2</b> Bidders need to certify the compliance of above specifications from respective OEM on their respective letter head.
Make	Moxa,Kontron,Advantech,AMiToranyothermakeof equivalent specifications.