
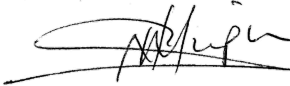
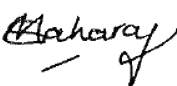

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## 1. Introduction

This Specification is based on the client's requirements for the implementation of a digital signage solution that the business can use to effectively communicate accurate information to all the Peaking offices and power stations.

## 2. Scope

The scope of this document includes the requirements that may be used to build, procure, and install a digital signage solution using a central content management solution that can distribute prepared information to media screens at all Peaking offices and power stations. Various maintenance options must be considered based upon cost and practicality. For example, contracted or "as-required".

## 3. Purpose

This document encompasses the user, functional and technical requirements of the solution selected by the business for the implementation of a digital signage across the business unit. This document shall be used as a working document for the requirements as the requirement may change as cost may affect decisions and implementation strategy. All Eskom Holdings Ltd. policies and standards are to apply where applicable in conjunction with the current business processes established.

The costs of the implementation of a solution will be paid for by the Peaking Generation business unit.

## 4. Applicability

This document applies to all persons involved with the specification, implementation, and operations of the solution.

## 5. Normative References

The applicable references are those that directly influence this requirement however the Eskom Holdings Ltd policies and standards not mentioned are not exclusive.

1. ISO 9001 Quality Management Systems
2. 32-85 Information Security Policy
3. 32-369 Information Security: Physical Asset Classification
4. 32-373 Information Security – IT/OT and Third-Party Remote Access Standard
5. 240-55410927 Cyber Security Standard for Operational Technology
6. 32-351 Information Security - Logical Access Control
7. 32-363 Information Security Asset and Information Classification Procedure
8. 32-382 Information Security Wireless Standard
9. 240-64720986 Emergency Preparedness Public Address System
10. 240-150139783 Rev 1 Cloud Standard
11. 32-438 Information Security Systems Classification Standard

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## 6. Definitions and Abbreviations

### 6.1 Definitions

<b>Client</b>	The Client is the receiver of a project, Peaking Generation.
<b>Project Manager</b>	Project Manager is the implementer of the project.
<b>Locations</b>	The sites indicated in the functional specification.
<b>60Hz</b>	Standard screen refresh rate in frames per second (fps) of monitors and televisions and digital media devices. For example, the human eye generally perceives 30 frames per second. The clarity for gaming or high-speed sports are better at higher fps.
<b>IP65 and IP67</b>	The international standard defining high-level protection from air-borne water and dust ingress. It indicates that an electrical enclosure is dust tight and watertight against light pressure water spray.
<b>Digital Signage Player or Hub</b>	A hardware device that plays music, videos, and images.
<b>Switch</b>	hardware device that connects devices in a network to each other.
<b>Router</b>	A hardware device that connects two or more LAN networks.
<b>HDMI</b>	carries both audio and video data between two or more HDMI compliant devices.
<b>2K Resolution</b>	A generic term for display devices or content having a horizontal resolution of approximately 2,000 pixels. defines a 2K format with a resolution of 2048 × 1080.
<b>Content Management System</b>	Software that enables a user to create, manage, and modify content on or other platform technical knowledge of the software.
<b>Media Signage Screens</b>	Digital signage hardware includes digital displays, digital media players, projectors, and audio systems. Digital signage screens come in various sizes, resolutions, brightness, and support for interaction.

### 6.2 Abbreviations

IT – Information Technology

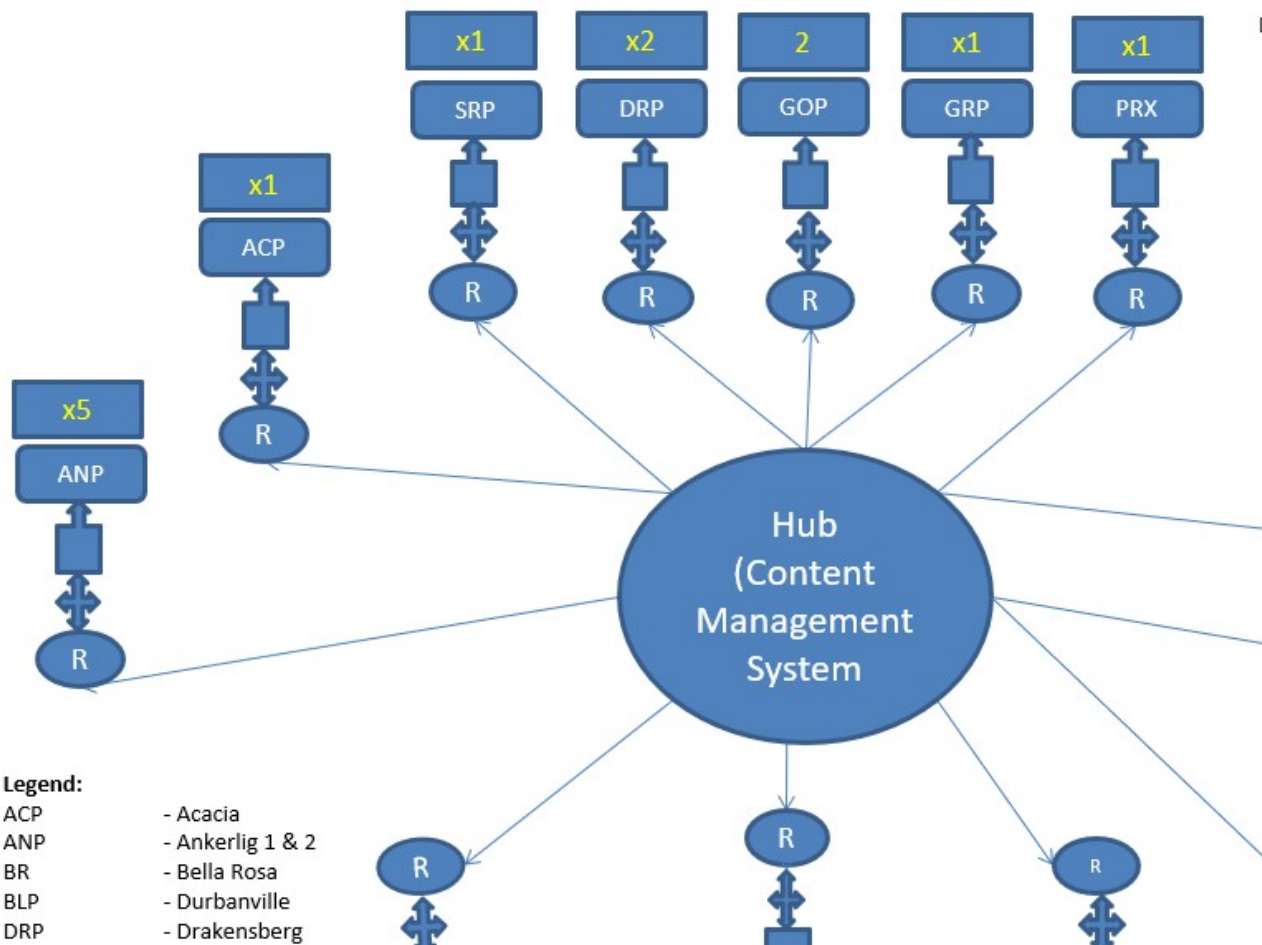
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**CONTROLLED DISCLOSURE**

IM – Information Management  
LAN – Local Area Network  
WAN – Wide Area Network  
ICT– Information and Communications Technology  
HDMI – High-Definition Multimedia Interface.  
MTTR – Meantime to Repair  
CMS – Content Management System.

## 7. Specification

### 7.1 Architectural Layout



The requirements for the Digital Signage System for Peaking Generation are as follows:

The following tables represents minimum requirements specifying the devices, software, support, and sundry that is required for the installation of a digital signage system for all the locations within the Peaking Generation business unit.

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**The locations are as follows:**

Location	Devices
Peaking (Durbanville Office)	2
Peaking (Bella Rosa Office)	2
Ankerlig 1 & 2 Power Stations (Atlantis)	5
Acacia Power Station (Monte Vista)	1
Port Rex Power Station (East London)	1
Palmiet Pumped Storage Scheme	2
Gourikwa Power Station (Mossel bay)	2
Gariep Power Station	1
Vanderkloof Power Station	1
Ingula Pumped Storage Scheme	5
Drakensberg Pumped Storage Scheme	2
Sere Windfarm (near Vredenburg)	1
Umtata, Zimbani CNC	1
<b>TOTAL</b>	<b>26</b>

## 7.2 Media Screens

Description	Quantity	Specification
Digital Media Devices/Screens	26	<ul style="list-style-type: none"> <li>Digital signage or media screens/display units</li> <li>60Hz Minimum Refresh Rate</li> <li>2K Resolution</li> <li>Minimum 55" screen size</li> <li>Must be mounted against the wall in predetermined areas at each location (will be confirmed during installation)</li> <li>Must have HDMI ports and/or audio and video connectivity</li> <li>Sound bars or equivalent that will clearly project sound from the media screen over 15m.</li> </ul>

## 7.3 Digital Signage Hubs

Description	Quantity	Specification
Digital Signage Player/Hub	26	<ul style="list-style-type: none"> <li>Digital Signage Player/Hub (or alternative suggested digital player solution)</li> <li>Ethernet interface (100MB/1GB per sec) with RJ45</li> <li>Wi-Fi capability (this will reduce the need for cabling infrastructure installations and cost)</li> <li>Must be able to receive data via the Eskom WAN</li> </ul>

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	<ul style="list-style-type: none"> <li>• Must not consistently stream data from a central hub or cloud configuration (except for Teams).</li> <li>• Video and audio “packages” created on the CMS must be downloaded from a central hub to a regional hub located near or next to the media screens.</li> <li>• The regional hub must control the presentation of the media to the media screen.</li> <li>• Operate at temperature of at least 40° Celsius</li> <li>• Preferably IP65 or IP67 compliant or industrial grade (depending upon location such as machine halls and other dusty areas)</li> <li>• Automatically play and loop video, audio, and image content</li> <li>• HDMI connection to display devices (or other video and audio connectivity configuration)</li> <li>• Must be able to accept a refresh of the media and audio package and display on the media screen</li> <li>• Ticker-tape functionality</li> <li>• Wall mounted with media screens</li> <li>• 60Hz Refresh</li> <li>• Minimum 2K Resolution</li> <li>• Mounted and secured at each digital media screen/device</li> <li>• Regional hub must be able to store the media data (video, text, and images) to stream to the media screen. The media must not stream from a product specific cloud location. An exception to use on premises storage or storage on the media devices. (a product specific or off-premises cloud location will involve extensive IT security and architectural involvement in the project).</li> <li>• Must be able to stream live footage from cameras (wired and wireless) to the hubs from one location to another. For example, cameras being used to stream maintenance work being done on a power station to other media devices on-site (the station) as well as to off-site stations and locations.</li> </ul>
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#### 7.4 Minimum Content Management Functionality

Description	Specification
Ticker-tape messages	<ul style="list-style-type: none"> <li>• Top, bottom, up to down and down to up.</li> <li>• Adjustable font type, size, and colour</li> <li>• Adjustable scrolling speed</li> </ul>
Scheduled Publishing	<ul style="list-style-type: none"> <li>• Calendar based scheduling</li> <li>• Set date and time of playback</li> <li>• Adjustable duration of display</li> <li>• Different scheduled downloads to selected locations.</li> </ul>
Templates	<ul style="list-style-type: none"> <li>• Provide standard templates</li> <li>• Create bespoke templates</li> <li>• Import media content from external devices</li> </ul>

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Permissions functionality	<ul style="list-style-type: none"> <li>• Security: Username and password functionality</li> <li>• Support multiple users. Indicate licencing options</li> <li>• Support different roles per user</li> <li>• Administrator role</li> <li>• Administrator can edit details and passwords of other users</li> <li>• Changeable passwords for each user</li> <li>• Record user's transaction history</li> </ul>
Content update/refresh	<ul style="list-style-type: none"> <li>• Download different content to specific locations (i.e., download specific content applicable to specific location).</li> </ul>
Streaming	<ul style="list-style-type: none"> <li>• The system must be able to cater for streaming from a central device (camera and microphone) via Teams</li> </ul>

## 7.5 Support, Warranty and Training

Support	<ul style="list-style-type: none"> <li>• MTTR for all media engines and digital signage unit – 10 Calendar days 5 x 8</li> <li>• MTTR for support of server/CMS - 3 Days</li> <li>• The maintenance support must include the testing and installation of firmware and software patches and upgrades.</li> <li>• Easy access for support to CMS operators for first month after commissioning of the solution.</li> <li>• An option to purchase a support contract or implement a pay on callout when required option must be assessed. Callout when required usually involves higher lead times to repair as well as longer lead times for spares or equipment replacement.</li> </ul>
Content Management Software	<ul style="list-style-type: none"> <li>• The CMS must be installed on the desktop/laptop, and then tested and commissioned by the vendor. Eskom will select and provide the hardware.</li> <li>• Two Eskom staff must be trained on the CMS.</li> <li>• Five licences depending upon cost, platform, and architectural approval.</li> </ul>
Warranties and guarantees	<ul style="list-style-type: none"> <li>• Minimum 2-year warranty on components</li> <li>• Minimum 2-year warranty on workmanship and installation</li> </ul>

## 7.6 Sundry

Eskom will provide	<ul style="list-style-type: none"> <li>• One Ethernet point or Wi-Fi connectivity per media engine</li> <li>• One single phase 220V plug point per media engine location will be provided by Eskom</li> <li>• Desktop or laptop devices for CMS</li> </ul>
Vendor must provide	<ul style="list-style-type: none"> <li>• HDMI cables and other connectivity</li> <li>• Brackets and other mounting equipment must be provided by the vendor</li> </ul>



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	<ul style="list-style-type: none"> <li>• Each unit (digital signage screen and engine) must be mounted, tested, and commissioned by the vendor</li> <li>• Preferred sales and technical support must be based in the Western Cape (The majority of Peaking stations are in the Western Cape) with capability of support for the KZN, Northern Cape, Eastern Cape, and Free State sites.</li> <li>• Technical Support in major centres to support outlying stations (preferably in major centres Johannesburg, Bloemfontein, Durban, East London).</li> <li>• Response time for support of all media engines and digital signage units</li> <li>• Response time for support of server/CMS</li> <li>• The maintenance support must include the testing and installation of firmware and software patches and upgrades.</li> </ul>
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## 8. Installation

The vendor must perform the following as a turnkey implementation:

- Provide the required hardware, software and related equipment as described.
- Provide a content management system and provide training as described above.
- Provide Eskom with a rollout project plan
- Mount and install all equipment (digital signage units, media devices, etc.).
- Connectivity and configuration of all media devices, network, and power (Eskom will provide power source and network).
- Test and commission using check sheets, manuals, and technical documentation
- Install and provide training on Content Management System
- Test the complete installation and provide results to Eskom
- Commission the entire installation

## 9. Additional Requirements

- Content Management System must be demonstrated to designated Eskom Peaking Generation staff for assessment prior to tender.