11. TELECOMMUNICATIONS AND ELV SYSTEMS

11.1 INTRODUCTION

11.1.1 The Maintenance, Repair and Overhauling (MRO) hangars Telecommunications and ELV Systems shall be delivered via a converged network infrastructure and shall cover the following components:

- Structured Cabling Network for Voice, data and Video.
- Closed Circuit Television (CCTV), where applicable and/or required.
- Security and Access Control System (SACS), where applicable and/or required.
- Fire Alarm System.

11.1.2 Guidelines herein are provided only as a general procedure to be followed for the telecommunications and ELV installations; however, for further and detailed technical requirements and standards, refer to Local Codes and Regulations, Etisalat design guidelines documentations, and other relevant International Standards, which are adopted by the Authorities namely DCA/DWC.

11.2 TELECOMMUNICATIONS AND ELV SYSTEMS DESIGN CRITERIA

11.2.1 Design Codes and Standards

The design of the telecommunications and ELV systems shall comply with relevant requirements and recommendations of:

- The IEC or other equal and approved codes, taking into account that network cables with fitted accessories and connector and wiring have to be of fire rated type in accordance with all NFPA requirements codes (NFPA72 and extensions).
- System components, parts, and installation are to comply with the corresponding recommendations of the Electronic Industries Alliance (EIA), and the International Electro-technical Commission (IEC). In particular:

  - ISO/IEC 11801: latest edition regarding Information Technology and generic cabling for customer premise.
  - EIA/TIA 568, Commercial Building for Telecommunication Wiring Standard.
  - EIA/TIA 569, Commercial Building for Telecommunication Pathways and spaces.
  - EIA/TIA 598-A, Optical Fiber Cable Color Coding.
  - EIA/TIA 455, Fiber Optic Test Procedures.
  - EIA/TIA 526, Standard Test Procedures for Fiber Optic Systems.
  - ITU-T G.650, Definitions and test methods for statistical and non-linear related attributes of single-mode fiber and cable.
  - ITU-T G.651, Characteristics of a 50/125 multimode graded index optical fiber cable.
  - ITU-T G.652, Characteristics of single-mode optical fiber and cable.
  - EIA/TIA TSB 140-4. Additional guidelines for field testing length, loss and polarity of Optical Fiber.
  - EIA/TIA TSB 67. Transmission performance specifications for field testing of unshielded twisted pair cabling systems.
  - EIA/TIA 606 for Telecommunications Infrastructure: this document provides the user with guidelines and choices of classes of administration for maintaining telecommunications infrastructure.
  - EIA/TIA 607 Commercial Building Grounding (Earthling) and Bonding Requirements for Telecommunications (ANSI/J-STD-607-A-2002).
  - IEC 60754-1 & 2 Test on Gases Evolved During Combustion of Materials from Cables and Test on Gases Evolved During Combustion of Electric Cables.
  - IEC 61034-1 & 2 Test and Measurement of Smoke Density of Cables Burning under Defined Conditions.
  - IEC 60331 part 11 & 12, Tests for Electric Cables under Fire Conditions.
  - IEC 60332 Tests on Electric Cables under Fire Conditions.
  - IEC 60364-1 Electrical Installations of Buildings, Fundamental Principles, Assessment of General Characteristics, Definitions.

- The latest issue of several material and test standards, which have been developed and published by Institute of Electrical and Electronics Engineers (IEEE) for data communications industry, but not limited to:

  - 802.1 – Network Management Group,
  - 802.2 – Logical Link Control Group,
  - 802.3 – Carrier Sense Multiple Access/Collision Detection Group,
  - 802.6 – Metropolitan Area Networking Group,
  - 802.7 – Broadband Technical Advisory Group,
  - 802.8 – Optic Fiber Technical Advisory Group,
  - 802.9 – Integrated Voice and Data LAN Working Group,