

**CHAPTER 232: VETERANS HEALTH ADMINISTRATION: OFFICE OF INFORMATION &
TECHNOLOGY (OIT)**

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1 PURPOSE AND SCOPE

This document provides space planning criteria for the Office of Information & Technology (OIT) as it applies to hospitals, outpatient clinics, community-based outpatient clinics, and medical facilities for the Department of Veterans Affairs (VA).

OIT is responsible for providing strategic and technical direction, guidance, and policies to ensure that information technology (IT) resources are best acquired and managed for VA, and responsible for ensuring the efficient and effective operation of VA's IT Management System.

This document also provides space planning criteria for the IT requirements of Facilities Management Service (FMS). Some of the functional areas and rooms are jointly used by both OIT and FMS.

2 DEFINITIONS

- A. Access Floor: A flooring system consisting of removable, modular panels supported on pedestals or stringers. The under-floor plenum space is used for distribution of power circuits and ducted air.
- B. Active Equipment: Energized equipment used for receiving or transmitting analog or digital signals, such as servers, hubs, routers, switches, rack-mounted UPSs, servers, firewalls, etc.
- C. Active (Data) Storage: Secure area for temporary storage of removable media containing active data.
- D. Archive (Data) Storage: A secure, offsite or remote area for storage of inactive or backup data, media, and electronic records.
- E. Automated Information Storage System (AISS): An enclosed storage and retrieval system that moves recorded media between storage and IT equipment.
- F. Backup Computer Room: Room that houses redundant, mission-critical IT equipment. The room is located remotely from the *Main Computer Room*.
- G. Cabinet: A protected enclosure containing a standardized frame for mounting multiple active IT or electronic equipment modules. Cabinets are designed to accommodate equipment modules of standard widths and heights. Standard widths are nominal 19-inch (the most common) or 23-inch. The heights of standard modules are multiples of 1.75-inches (this dimension is known as one "Rack Unit" or "U"). A cabinet houses *Active Equipment*. For unenclosed frames, see *Rack*.
- H. Computer Equipment: See *Information Technology Equipment*.
- I. Computer Floor: See *Access Floor*.

- J. Computer Room: A room or space containing *Information Technology Equipment*. See also *Main Computer Room*.
- K. Concept of Operations: A user-developed guide to the functional operation of the VA facility. It defines the function of the facility and the scope of services to be provided in the new or remodeled space(s).
- L. Demarc Room: Also known as the Demarcation Room, and formerly known as the Main Distribution Frame (MDF). It is the space where services brought to the facility by outside providers, such as telephone, data, and cable television providers, are initially terminated. The service provider network cabling ends and the VA premises cabling begins in this room.
- M. Departmental Net to Gross (DNTG) Conversion Factor: A parameter, determined by the VA for each Space Planning Criteria chapter, used to convert the programmed Net Square Foot (NSF) area to the Department Gross Square Foot (DGSF) area. The DNTG Departmental Conversion Factor for OIT is 1.30.
- N. Desktop Computer: IT equipment designed for individual use at a workstation, and used to input, retrieve, and manipulate information. A desktop computer typically consists of a processor unit, monitor, keyboard, mouse, and speakers.
- O. Digital Telephone (PBX) Equipment: Digital Telephone Equipment switches digital voice signals. This system is powered from the Life Safety branch of the Emergency Power System (NFPA 70, Article 517) and may be used to issue instructions during emergency conditions.
- P. Facilities Management Service (FMS) Communications Systems and Equipment: Microprocessor- or server-based systems and/or equipment that are **outside the purview of OIT**, such as, but not limited to: Nurse Call and/or Code Blue (Blue); PACS; Television (Master Antenna [MATV], Community Antenna [CATV], Closed Circuit [CCTV] [for education] & Satellite TV [SATV]); Radio (Paging [Code Blue, Emergency & Routine]), Microwave, Satellite Radio/Telephone & Radio Entertainment; Public Address (Overhead Paging, Mass Notification, and Intercommunications [Intercom]); Physical Security Management (Access Control, Motion Intrusion Detection, Duress and/or Panic Alarm & Security Surveillance Television [SSTV]); Patient, Staff and Asset Monitoring (Medical Telemetry, Patient/Staff Location, and Cardiac); Energy Management; Emergency (Fire Alarm/Mass Notification, Police, and Disaster). These systems and equipment shall be located in the FMS area of the *Telecommunications Rooms* and the Antenna Equipment Headend Room. Headend, host servers, or active equipment associated with archiving, packetized storage, or transport of confidential information generated by a FMS system shall be located within the *OIT Equipment Area* of the *Main Computer Room*, and will be serviced and managed by OIT.
- Q. Full-Time Equivalent (FTE): A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose total time commitment equals that of a full-time employee. One FTE equals 40 hours per week.
- R. Input Data Statements: A set of questions that elicit information used to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements are Mission-related, based on the project's

Concept of Operations; and Workload and Staffing related, based on projections and data provided by the Veterans Health Administration (VHA) or the Veterans Integrated Service Network (VISN) about the estimated model of operation for the facility. This information is processed through mathematical and logical operations in VA-SEPS.

- S. Information Technology (IT): The design, development, implementation, support and management of computer-based information systems, particularly software applications and computer hardware.
- T. Information Technology (IT) Equipment: Any electronic digital or analog computer, with all peripheral, support, memory, programming, or other directly associated equipment, records, and activities.
- U. Information Technology Equipment Area: Used in 2003 and later editions of NFPA 75 in lieu of the term "computer equipment area." See *Computer Area*.
- V. Information Technology Equipment Room: Used in 2003 and later editions of NFPA 75 in lieu of the term "computer room." See *Computer Room*.
- W. Jack: Female telecommunications connector used to connect field equipment to horizontal cabling. See also *Port*.
- X. Main Computer Room: A room containing both primary information technology systems active equipment and passive backbone cabling distribution terminations. The Main Computer Room is one of the spaces located within the Computer Area functional area. The OIT IT and FMS IT systems housed in the Main Computer Room may include, but are not limited to: Voice over IP (VoIP), Voice (PBX), Data LAN, Wireless LAN, PACS, Digital Imaging, Asset Tracking/Management, Patient Monitoring Systems, Video Surveillance, Security Access, Nurse Call, MATV/CATV, Public Address, Fire Alarm, Mass Notification, and Overhead Paging.
- Y. NFPA 75: National Fire Protection Association Standard for the Protection of Information Technology Equipment.
- Z. Information Technology Equipment (OIT): Any electronic digital computer, with peripheral support, memory, programming, or other directly associated equipment, records, and activities that supports VA's Healthcare Mission and allows archiving and/or packetized storage and transportation of confidential patient, staff or public information. OIT equipment located with OIT Equipment Area of the *Main Computer Room is not permitted to actively process life safety data, nor any FMS systems Data* (refer to *Facilities Management Service (FMS) Communications Systems and Equipment*).
- AA. OIT: VA Office of Information & Technology.
- BB. Passive Distribution Equipment: Equipment that does not require electrical power and does not modify the transmitted signal through amplification, retiming or regeneration. Passive distribution equipment is used for the termination of backbone fiber optic cabling. For termination of passive voice copper, see *Voice Passive Distribution Area*.
- CC. Personal Computer (PC): See *Desktop Computer*.

- DD. Port: An identifier of an application process within the TCP/IP suite. An active port may be for voice, VoIP, or data service, and is the assignment connectivity between a server and a network-connected device (such as workstation, printer, or wireless access point). While a port cannot be physically associated with a jack, it requires physical space for the active server equipment associated with it. See also *Jack*.
- EE. Professional Staff: Professional Staff includes Chief, Assistant Chief, Section Heads, Supervisors, and Programmers.
- FF. Program for Design (PFD): A space program based on criteria set forth in a Space Planning Criteria, and specific information about Concept of Operations, workload projections and authorized staffing levels.
- GG. Project Room Contents (PRC): The list of equipment for every room in the project.
- HH. Rack: An open (non-enclosed) standardized frame for mounting multiple passive IT or electronic equipment modules. Racks are designed to accommodate equipment modules of standard widths and heights. Standard widths are nominal 19-inch (the most common) or 23-inch. The heights of standard modules are multiples of 1.75-inches (this dimension is known as one "Rack Unit" or "RU"). A rack houses passive (non-powered) equipment, such as patch panels and Fiber Distribution Units (FDU). For enclosed frames, see *Cabinet*.
- II. Raised Floor: See *Access Floor*.
- JJ. SEPS (VA-SEPS): Acronym for Space and Equipment Planning System, a digital tool developed jointly by the Department of Veterans Affairs and the Department of Defense. VA-SEPS, the Department of Veterans Affairs version of SEPS, is used to generate a Program for Design and an Equipment List for a VA project, based on specific information entered in response to Input Data Questions. VA-SEPS incorporates the propositions set forth in the VA Space Planning Criteria chapters. VA-SEPS has been designed to aid planners in creating a program for design based on a standardized set of criteria parameters.
- KK. Service Provider: Outside providers of services to the facility, such as telephone, data, and cable television providers.
- LL. Telecommunications Room (TR): A room used for both OIT active and passive IT distribution equipment and FMS active and passive distribution equipment. The term "Telecommunications Room" replaces the legacy terms "Signal Closet" and "Telecommunications Closet," which are no longer used.
- MM. Telecommunications Support Area: Within the space program for OIT, the Telecommunications Support Area is the functional area that contains spaces primarily used for the OIT and FMS backbone distribution systems, including the Demarc Rooms and the Telecommunications Rooms.
- NN. Uninterruptible Power Supply (UPS): A system of electrical power conditioning and battery storage used to provide continuous power to IT equipment.
- OO. Voice over Internet Protocol (VoIP) System and Equipment: Digital voice equipment in which analog voice signals are converted to digital packets and transmitted over a Local Area Network (LAN) using Transmission Control / Internet Protocol. This

system may be powered from the Essential Branch of the Emergency AC Power System (Reference NFPA 70, Articles 517 & 800).

- PP. Voice Passive Distribution Area: Area for wall-mounted terminations of copper voice backbone cables.

3 OPERATING RATIONALE AND BASIS OF CRITERIA

- A. OIT is responsible for the management and operation of the IT program to support the staff and services at each VA facility. This responsibility encompasses all aspects of designing, implementing, operating, and maintaining IT systems, and includes management consulting, user support and training, technical management, around-the-clock operation, and maintenance of hardware, software, and telecommunications systems.
- B. Space planning criteria have been developed on the basis of an understanding of the activities involved in the functional areas of OIT and its relationship with other services of a medical facility. These criteria are predicated on established and/or anticipated best practice standards. These criteria are subject to modification relative to development in equipment, and subsequent planning and design.
- C. The functional areas that are most critical in support of the OIT's mission include the Computer Area (which houses the Main Computer Room for IT equipment), Computer Support Area, and Telecommunications Support Area (which includes spaces required for the network distribution systems). The current trend is for medical systems (OIT-supported) and Facilities Management Service systems (non-OIT-supported) to require more active IT equipment for their operation. Remaining functional areas are Reception Area, Staff and Administrative Area, and Staff Lounge, Lockers, and Toilets. These areas provide space for staff and administrative offices, computer training classroom, and office support functions.

Functional Areas 1 through 6 apply to OIT when located in a hospital, medical center, or outpatient clinic.

Quantities and sizes of spaces required in the Reception Area, Staff and Administrative Area, and Staff Lounge, Lockers, and Toilets functional areas are determined primarily from the number of authorized FTEs assigned to OIT.

Quantities and sizes of spaces required for functions in the Computer Area, the Computer Support Area, and the Telecommunications Support Area are determined primarily from the total net area of the facility. These space standards are based on the quantity of floor-mounted cabinets and racks needed to house the anticipated systems and level of redundancy.

Space requirements are computed separately for OIT IT active and passive equipment, Telephone (VoIP or PBX) active and passive equipment, FMS systems active and passive equipment, and conduit entry areas, which are then totaled to establish the size of the Main Computer Room. Adjacent space for supporting mechanical, electrical, and clean agent fire suppression equipment is proportioned to the size of the Main Computer Room.

VA OIT determines if the site-specific voice solution will utilize VoIP technology or Digital Telephone (PBX) equipment. This affects the size of the space for voice equipment.

Space may also be required to support OIT equipment necessary to backup systems at the VISN, regional, or national levels. If required, these systems may be located onsite in the Main Computer Room, or in a remote Backup Computer Room. This determination will be made by VA OIT on a case-by-case basis.

4 PROGRAM DATA REQUIRED (Input Data Questions)

A. Mission Input Data Statements

1. Is a VoIP System authorized? (M)
2. Is Digital Telephone (PBX) authorized? (Note: If a VoIP system is authorized, a Digital Telephone (PBX) system is not authorized) (M)
3. Is a Backup Computer Room authorized? (M)
4. Is a Telephone Operators Room authorized? (M)
5. Is onsite configuration and repair of IT equipment authorized? (M)
6. Is this a "Mission Critical", as defined in VA Physical Security Design Manual, facility? (M)
7. Is computer-based training authorized? (M)
8. Is an OIT Chief of Service FTE position authorized? (M)

B. Workload Input Data Statements

1. What is the total NSF of this Facility? (W)

C. Staffing Input Data Statements

2. How many Assistant Chief of Service (ACOS) FTE positions are authorized? (S)
3. How many Section Head FTE positions are authorized? (S)
4. How many Supervisor FTE positions are authorized? (S)
5. How many software Programmer FTE positions are authorized? (S)
6. How many Administrative Assistant FTE positions are authorized? (S)
7. How many Computer Operator FTE positions are authorized? (S)
8. How many Computer Technician FTE positions are authorized? (S)
9. How many Service Technician FTE positions are authorized for the Equipment Configuration / Repair Workroom? (S)
10. How many Telephone Operator FTE positions are authorized? (S)
11. How many Customer Service / Help Desk FTE positions are authorized? (S)

D. Miscellaneous Input Data Statements

1. How many Service Providers are authorized? (Misc)
2. How many FTEs working on peak shift are projected? (Misc)
3. How many FTE staff without dedicated office/ cubicle are projected? (Misc)

5 SPACE CRITERIA

A. FA 1: Reception Area

1. **Waiting (WRC01)****30 NSF (2.8 NSM)**
Provide one if the total NSF of this Facility is greater than 249,999 NSF.
2. **Reception (RECP1)****80 NSF (7.4 NSM)**
Minimum NSF if the total NSF of this Facility is between 50,000 and 249,999; provide an additional 40 NSF if the total NSF of this Facility is greater than 250,000 .
3. **Toilet, Public (TLTU1)****55 NSF (5.1 NSM)**
Provide one if the total NSF of this Facility is greater than 199,999 NSF.

B. FA 2: Computer Area

The Computer Area includes spaces for IT equipment and immediately necessary support equipment. Spaces in the Computer Area shall be provided with dedicated HVAC systems when separation from spaces in Computer Support Area is provided in accordance with NFPA 75. Minimal space for storage of essential records or materials (as defined in NFPA 75) is included in the Computer Area. Backup and general storage shall be provided in the Computer Support Area.

Main Computer Room

The Main Computer Room contains both the OIT and FMS IT equipment (active and passive distribution) and any immediately necessary support equipment.

The choice of voice system type will be made by OIT. There will either be a VoIP voice system, or a Digital Telephone (PBX) voice system.

1. **OIT IT Active Equipment (ITAE1)****160 NSF (14.9 NSM)**
Minimum NSF if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 40 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 80 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 120 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 160 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 200 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 240 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 280 NSF if the total NSF for this Facility is greater than 399,999.

Minimum allocated area provides space for cabinets to support OIT active equipment and UPS; and includes access aisles at one side and one end of each row of cabinets. Cabinets include spare capacity for future OIT IT equipment.

2. **OIT IT Passive Distribution Equipment (ITPE1)****100 NSF (9.3 NSM)**
Minimum NSF if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 25 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 50 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 75 NSF if the total NSF of

this Facility is between 150,000 and 199,999; provide an additional 100 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 150 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 200 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 250 NSF if the total NSF of this Facility is greater than 399,999.

Minimum allocated area provides space for racks and includes access aisles on two sides and one end of the racks. Minimum area includes 10 NSF for conduit entry from Demarc Room(s). Racks are used to terminate fiber backbone passive distribution cables for the Telecommunication Rooms (TRs).

3. FMS Active Equipment (FMAE1)..... 80 NSF (7.4 NSM)

Minimum NSF if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 20 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 40 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 60 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 80 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 100 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 160 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 220 NSF if the total NSF of this Facility is greater than 399,999.

Minimum allocated area provides space for cabinets to support active equipment and UPS; and includes access aisles at one side and one end of the row of cabinets. Cabinets include spare capacity for future Facilities Management IT equipment.

4. FMS Passive Distribution Equipment (FMPE1)..... 100 NSF (9.3 NSM)

Minimum NSF if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 25 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 50 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 75 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 100 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 150 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 200 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 250 NSF if the total NSF of this Facility is greater than 399,999.

Minimum allocated area provides space for racks and includes access aisles on two sides and one end of the row of racks. Racks are used to terminate fiber backbone passive distribution cables for the Telecommunication Rooms (TRs).

5. VoIP Active Equipment (TEIP1) 160 NSF (14.9 NSM)

Minimum NSF if VoIP system is authorized and the total NSF of this Facility is between 25,000 and 49,999; provide an additional 40 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 80 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 120 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 160 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 200 NSF if the total NSF of this Facility is between

250,000 and 299,999; provide an additional 240 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 280 NSF if the total NSF of this Facility is greater than 399,999.

Minimum allocated area provides space for cabinets to support VoIP active equipment and UPS; and includes access aisles at fronts, backs, and one end of cabinets. The minimum area includes space, 15 by 1 feet, for wall-mounted passive distribution equipment for copper backbone (110 termination blocks).

6. Digital Telephone (PBX) Equipment (TEDP1)..... 165 NSF (15.3 NSM)

Minimum NSF if Digital Telephone (PBX) system is authorized and if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 30 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 60 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 90 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 120 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 150 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 180 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 210 NSF if the total NSF of this Facility is greater than 399,999.

The allocated area provides space for cabinets to include one equipment cabinet for incoming trunk, active Digital Telephone PBX equipment cabinets, and one UPS cabinet; with access aisles on two sides and one end of the row of cabinets. The allocated area includes space, 17.5 by 1 feet, for wall-mounted passive distribution equipment for copper backbone (110 termination blocks).

Other Spaces within the Computer Area

The following spaces are located within the Computer Area and may be served by the same dedicated HVAC equipment as the Main Computer Room. These spaces are separated from the Main Computer Room by fire resistive construction (partitions).

7. Network Operations Room (ITNT1).....120 NSF (11.1 NSM)

Provide one if the total NSF of this Facility is greater than 24,999 NSF.

This room provides workspace for two computer operators/technicians immediately adjacent to the Main Computer Room.

8. Storage, Active Data (ITAD1).....100 NSF (9.3 NSM)

Provide one if the total NSF of this Facility is greater than 49,999 NSF.

This space allocated for storage of active media / records and is immediately accessible from the Main Computer Room.

9. HVAC and Electrical Equipment, Computer Area (ITAC1)250 NSF (23.2 NSM)

Minimum NSF if the total NSF of this Facility is between 25,000 and 49,999; provide an additional 65 NSF if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 130 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 195 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 260 NSF if the

total NSF of this Facility is between 200,000 and 249,999; provide an additional 325 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 390 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 455 NSF if the total NSF of this Facility is greater than 399,999.

This space is allocated to mechanical, fire suppression, and electrical equipment dedicated to serving the Main Computer Room. This space should be adjacent to the Main Computer Room. Computer Room Air Conditioning units (CRACs) and clean agent fire suppression tanks are to be located in this space.

10. **Backup Computer Room (ITBU1) 300 NSF (27.9 NSM)**
Minimum NSF if a Backup Computer Room is authorized and if the total NSF of this Facility is between 50,000 and 99,999; provide an additional 25 NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 50 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 75 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 100 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 125 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 150 NSF if the total NSF of this Facility is greater than 399,999.

This room accommodates redundant, mission-critical, IT equipment. This room should be located physically remote from the Main Computer Room and the Computer Area. CRAC unit(s) and clean agent fire suppression system for the Backup Computer Room are to be located in this space.

C. FA 3: Computer Support Area

The following spaces are to be located outside the Computer Area when separation is required by NFPA 75. These spaces will not be served from the Computer Area air conditioning system.

1. **Receiving / Breakdown Room (ITBD1) 240 NSF (22.3 NSM)**
Provide one if onsite configuration and repair of IT equipment is authorized and if the total NSF of this Facility is greater than 99,999.

This space provides for secure unpacking or staging of new equipment before issue or use, holding packing materials for disposal, and for staging equipment to be removed.

2. **Storage, IT Equipment (SRE01) 240 NSF (22.3 NSM)**
Provide one if onsite configuration and repair of IT equipment is authorized and if the total NSF of this Facility is greater than 49,999.

Allocated space is for secure, bulk storage of new or surplus IT equipment, desktop computers, and other large items. Locate adjacent to Receiving / Breakdown Room.

3. **Storage, Temporary Data (ITRD1) 120 NSF (11.1 NSM)**
Provide one if the total NSF of this Facility is greater than 99,999.

This space provides for temporary storage of media / records used for system backup or restoration, remote from the Computer Area.

4. **Workroom,
Equipment Configuration / Repair (ITWR1) 200 NSF (18.6 NSM)**
Provide one if onsite configuration and repair of IT equipment is authorized and if the total NSF of this Facility is between 100,000 and 199,999; provide an additional 35 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 70 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 105 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 140 NSF if the total NSF of this Facility is greater than 399,999.

The minimum space provides for two Service Technician workstations and storage of small parts and equipment used in configuration and repair of IT equipment.

D. FA 4: Telecommunications Support Area

1. **Telephone Operators Room (TEOR1).....120 NSF (11.1 NSM)**
Provide one if a Telephone Operators Room is authorized and if the total NSF of this Facility is greater than 150,000; provide an additional 64 NSF per each Telephone Operator FTE position authorized greater than two.

This location is often, but not always, staffed on a 24/7 basis. Operators may also have responsibility of monitoring critical alarms for equipment or systems at the facility. *Do not* duplicate space when this function is the responsibility of Medical Administration / Health Administration Service (HAS).

2. **Toilet, Staff (TLTU1)55 NSF (5.1 NSM)**
Provide one if a Telephone Operators Room is authorized and if the total NSF of this Facility is greater than 149,999.

Locate immediately adjacent to Telephone Operators Room.

3. **Lounge, Telephone Operators (SL001).....80 NSF (7.4 NSM)**
Provide if a Telephone Operators Room is authorized and if the total NSF of this Facility is greater than 149,999.

Locate immediately adjacent to Telephone Operators Room.

4. **Telecommunications Room, TR (TETR1)20 NSF (1.9 NSM)**
Provide one; minimum NSF if the total NSF of this Facility is between 250 and 999; provide an additional 180 NSF if the total NSF of this Facility is between 1000 and 6,749; provide two at 200 NSF each if the total NSF of this Facility is between 6,750 and 12,499; provide four at 200 NSF each if the total NSF of this Facility is between 12,500 and 24,999; provide seven at 200 NSF each if the total NSF of this Facility is between 25,000 and 49,999; provide fourteen at 200 NSF each if the total NSF of this Facility is between 50,000 and 99,999; provide twenty at 200 NSF each if the total NSF of this Facility is between 100,000 and 149,999; provide twenty seven at 200 NSF each if the total NSF of this Facility is between 150,000 and 199,999; provide thirty four at 200 NSF each if the total NSF of this Facility is between 200,000 and 249,999; provide forty at 200 NSF each if the

total NSF of this Facility is between 250,000 and 299,999; provide fifty four at 200 NSF each if the total NSF of this Facility is between 300,000 and 399,999; provide an additional one at 200 NSF for every increment of 7,500 NSF if the total NSF of this Facility is equal or greater than 400,000.

These rooms contain active and passive distribution equipment and conduit risers for OIT and FMS. There may be multiple TRs on a floor. Where multiple rooms are employed, the TRs may be associated with specific functional areas. In multi-floor buildings, the TRs must be stacked vertically from floor to floor. An optional fence may separate the OIT and FMS areas within the TRs.

5. **Demarc Room (TEDR1) 100 NSF (9.3 NSM)**
Provide one if the total NSF of this Facility is greater than 24,999; provide two for Mission Critical facilities (as defined in VA Physical Security Design Manual).

This room is provided for the termination of services brought to the facility by outside Service Providers.

6. **Antenna Headend Equipment Room (TEEQ1) 300 NSF (27.9 NSM)**
Provide one if the total NSF of this facility is greater than 49,999.

The Antenna Headend Equipment Room accommodates all provided and planned head end cabinets for antenna-based Facilities Management Service systems (i.e. MATV/CATV, CCTV, SSTV, Radio Entertainment, Two-Way Radio, etc.). The room is sized for a minimum of five separate systems and four future systems.

E. FA 5: Staff and Administrative Area

1. **Office, Chief of Service (OFC01) 150 NSF (13.9 NSM)**
Provide one if the OIT Chief of Service FTE position is authorized and if the total NSF of this Facility is greater than 199,999.
2. **Office, Assistant Chief of Service (OFA01 / OFA02) 120 NSF (11.1 NSM)**
Provide one per each Assistant Chief of Service (ACOS) FTE position authorized and if the total NSF of this Facility is greater than 99,999; provide OFA01 if Standard Furniture is authorized; or, OFA02 if Systems Furniture is authorized.
3. **Office, Section Head / Supervisor (OFA01 / OFA02) 100 NSF (9.3 NSM)**
Provide one per each Section Head FTE and Supervisor FTE position authorized and if the total NSF of this Facility is greater than 99,999; provide OFA01 if Standard Furniture is authorized; or, OFA02 if Systems Furniture is authorized.
4. **Cubicle, Programmer (OFA03) 80 NSF (7.4 NSM)**
Provide one per each software Programmer FTE position authorized and if the total NSF of this Facility is greater than 24,999.
5. **Cubicle, Computer Operator / Technician (OFA03) 64 NSF (5.9 NSM)**
Provide one per each Computer Operator and Computer Technician FTE position authorized and if the total NSF of this Facility is greater than 24,999.
6. **Cubicle, Customer Service / Help Desk (OFA03) 64 NSF (5.9 NSM)**

Provide one per each Customer Service / Help Desk FTE position authorized, and if the total NSF of this Facility is greater than 49,999.

7. **Conference Room (CRA01)250 NSF (23.2 NSM)**
Minimum NSF if the total NSF of this Facility is between 100,000 and 199,999; provide an additional 50 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 100 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 150 NSF if the total NSF of this Facility is greater than 299,999.

8. **Copy Room (RPR01)100 NSF (9.3 NSM)**
Provide one if the total NSF of this Facility is greater than 99,999.

This space is for office equipment including copier, fax, and staff mailboxes.

9. **Storage, Forms / Literature (SRS01)100 NSF (9.3 NSM)**
Provide one if the total NSF of this Facility is greater than 99,999.

Allocated space is for storage of forms and general office supplies for the Staff and Administrative Area.

10. **Classroom, Computer Training (CLR03)375 NSF (34.8 NSM)**
Provide one if computer-based training is authorized; minimum NSF if the total NSF of this Facility is between 100,000 and 149,999; provide an additional 75 NSF if the total NSF of this Facility is between 150,000 and 199,999; provide an additional 150 NSF if the total NSF of this Facility is between 200,000 and 249,999; provide an additional 225 NSF if the total NSF of this Facility is between 250,000 and 299,999; provide an additional 300 NSF if the total NSF of this Facility is between 300,000 and 399,999; provide an additional 375 NSF if the total NSF of this Facility is greater than 399,999.

Allocated space provides for twelve workstations (including 4 accessible workstations) and instructor workstation or lectern. Do not duplicate classroom space provided by Educational Facilities (Chapter 402).

11. **Storage, Computer Training (SRS01)100 NSF (9.3 NSM)**
Provide one if computer-based training is authorized, and if the total NSF of this Facility is greater than 199,999.

This space is used for storage of training materials.

12. **Workroom, Projects (WRCH1)100 NSF (9.3 NSM)**
Minimum NSF if the total NSF of this Facility is between 100,000 and 199,999; provide an additional 100 NSF if the total NSF of this Facility is between 200,000 and 399,999; provide an additional 200 NSF if the total NSF of this Facility is greater than 399,999.

This space is a multipurpose staff workroom for collaborative work or special projects.

13. **Housekeeping Aides Closet-HAC (JANC1) 40 NSF (3.7 NSF)**
Provide one per OIT if the total NSF of this Facility is greater than 49,999.

F. FA 6: Staff Lounge, Lockers and Toilets:

The spaces below provide programming of Lounge, Lockers, and Toilets at the service level. Alternatively, sum all departments/services data for Lockers, Lounges and Toilets, and program space in Chapter 410-EMS Lockers, Lounges, Toilets and Showers. Do not duplicate space. Provide locker space only for those FTEs without office or cubicle space.

1. **Lounge, Staff (SL001).....80 NSF (7.4 NSM)**
Minimum NSF if the total NSF of this Facility is greater than 49,999; provide an additional 15 NSF per each projected FTE working on peak shift greater than five; maximum 300 NSF.

For less than five FTE combine Lounge facilities with adjacent department or sum in Chapter 410.

2. **Lockers, Staff (LR001).....25 NSF (2.3 NSM)**
Minimum NSF if the total NSF of this Facility is greater than 49,999; provide an additional 2.5 NSF per each projected FTE staff without dedicated office/cubicle space greater than ten.

3. **Toilet, Staff (TLTU1).....55 NSF (5.1 NSM)**
Minimum one if the total NSF of this Facility is greater than 49,999; provide an additional staff toilet for each increment of five projected FTEs working on peak shift greater than thirteen.

6 PLANNING AND DESIGN CONSIDERATIONS

- A. The Departmental Net-to-Gross factor (DNTG) for OIT is 1.25. This number, when multiplied by the programmed Net Square Foot (NSF) area, determines the Departmental Gross Square Feet (DGSF).
- B. Security and continuity of service of IT systems is critical to the mission of VA. The Computer Area and Computer Support Area provide the essential data center functions. Key planning considerations for these areas are:

1 Flexibility

Changes in IT systems and equipment requirements are certain to occur over the useful life the building. Computer Rooms and support spaces require specialized construction, HVAC systems, and other utilities.

- a. Modularity. Planning modules must accommodate standard sizes of IT equipment cabinets and racks, and must be compatible with the building structural grid and general planning module for the facility. See the OIT Design Guide for recommended modules and Guide Plates of key rooms.
- b. Scalability. Use of standard modules facilitates “scaling” the computer and telecommunications rooms to match systems requirements from very small (clinic and CBOC) to very large facilities (major medical center).
- c. Expandability. Space criteria for computer and telecommunications rooms were developed with the recognition that increasing the size of these spaces after initial construction and occupancy is difficult. Relocation of mechanical and electrical equipment and distribution systems is costly and can be disruptive to the ongoing operation of the medical facility. Allowances for 50% spare or future capacity are included in the program areas. Whenever

possible plan for “soft” space (offices, conference rooms, etc) on at least one side of the Main Computer Room. Consider installing access floor in the “soft” space to facilitate expansion of Main Computer Room.

2 Physical Security

See VA Physical Security Design Manual (PSDM) for detailed requirements.

- a. Location. Locate computer and telecommunications rooms to avoid exterior walls (unless hardened), loading docks, mailrooms, sources of electromagnetic interference, fire and smoke hazards, wet locations or high humidity, and high traffic patient care areas. Only wet pipe systems directly service the computer or telecommunications room shall be allowed in the room or on the floor directly above the space.
- b. Partitions and Doors. Provide fire resistance rated construction in accordance with VA Fire Protection Design Manual and NFPA 75. Comply with security requirements of VA PSDM.
- c. Fire Protection. Comply with VA Fire Protection Design Manual and NFPA 75.
 - (1) Wet pipe automatic fire sprinkler system shall be provided in all computer and telecommunications rooms in accordance with VA policy.
 - (2) Clean Agent fire suppression systems shall be provided in the Main Computer Room and Backup Computer Room **in addition to** the wet pipe automatic fire sprinkler system.

3 Offsite Services

There is no OIT or FMS data storage provided in the functional areas described in this Chapter, other than temporary storage intended for media / records used for system backup or restoration. There may be the need to identify an offsite or remote location for the storage of archived data, media, and electronic records. Minimum suggested space is 100 NSF for data storage; however, specific space requirements are to be determined by OIT.

4 Mission-Critical Services

OIT will determine if a facility will provide backup, redundant, or continuity of operations information technology services for other VA facilities, VISNs, or regions; or for other government agencies.

7 FUNCTIONAL RELATIONSHIPS

OIT provides IT hardware, software, and network support to all other Services at a medical center, outpatient clinic, or other VA facility. The physical limitations for network cabling length and the number of cables to be terminated will require TRs to be located in proximity to the using Services throughout the building or buildings served. Therefore the principal connection between OIT and other Services will be via the network, with little need for strong adjacencies. On the other hand, separation from some Services and other building systems is desirable or necessary for efficiency, security, and reliability. Relationships of OIT to other Services are listed below:

PROXIMITY CODES FOR MATRIX

The degree of proximity that is desirable with other departments or areas that share a functional relationship with OIT is indicated by a scale of 1 to 4 (1 representing the greatest level of adjacency). An "X" entered in the diagram represents a relationship where separation is desirable for the departments or areas in question.

Code Proximity Relationship

1 Very Strong: Adjacent

2 Strong: Close, same floor

3 Moderate: Convenient, different floor acceptable

4 Weak: May be separated, limited traffic or communication necessary

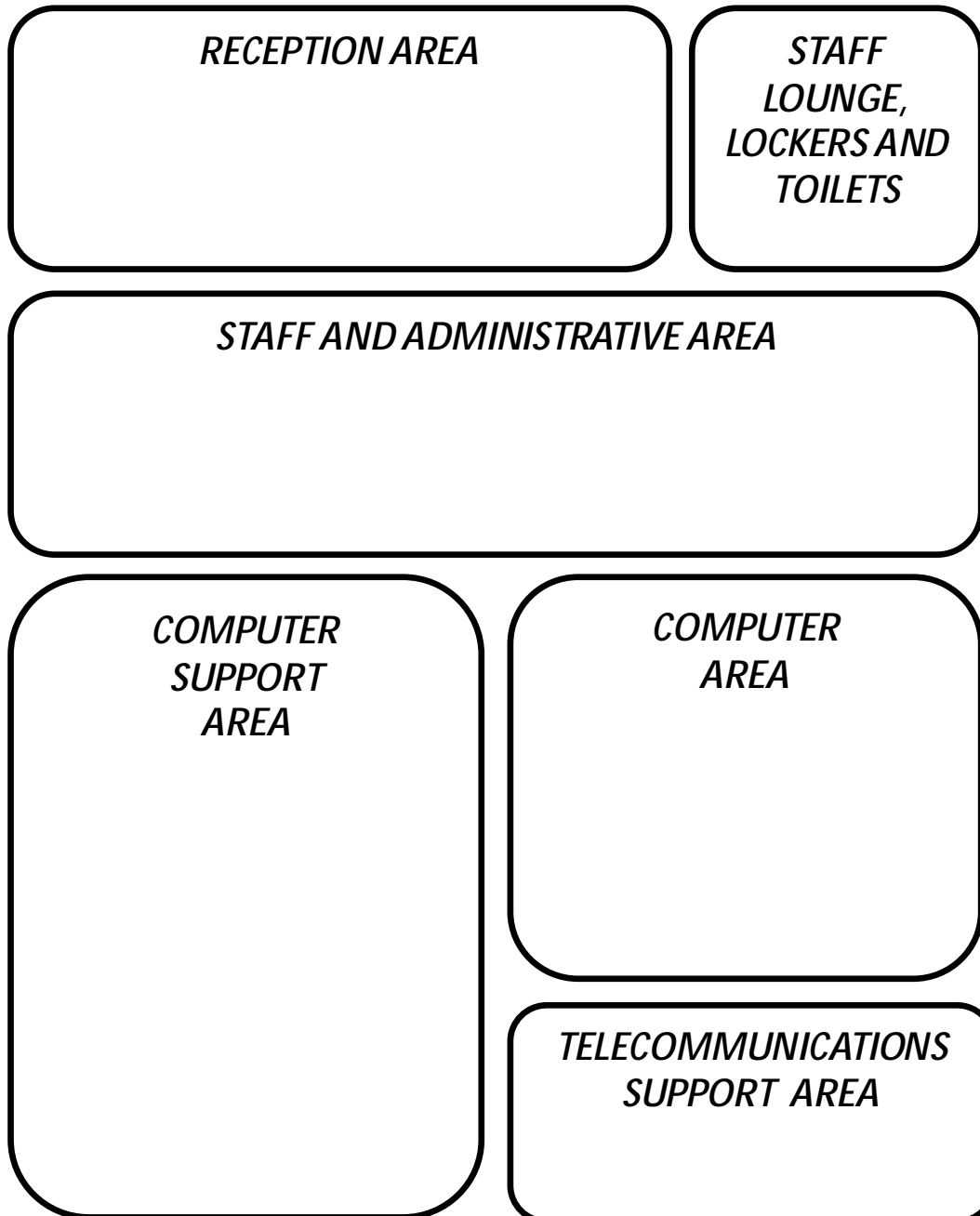
-- Neutral or no relationship

X Separation required or desirable

TABLE 7-1 : FUNCTIONAL RELATIONSHIP MATRIX

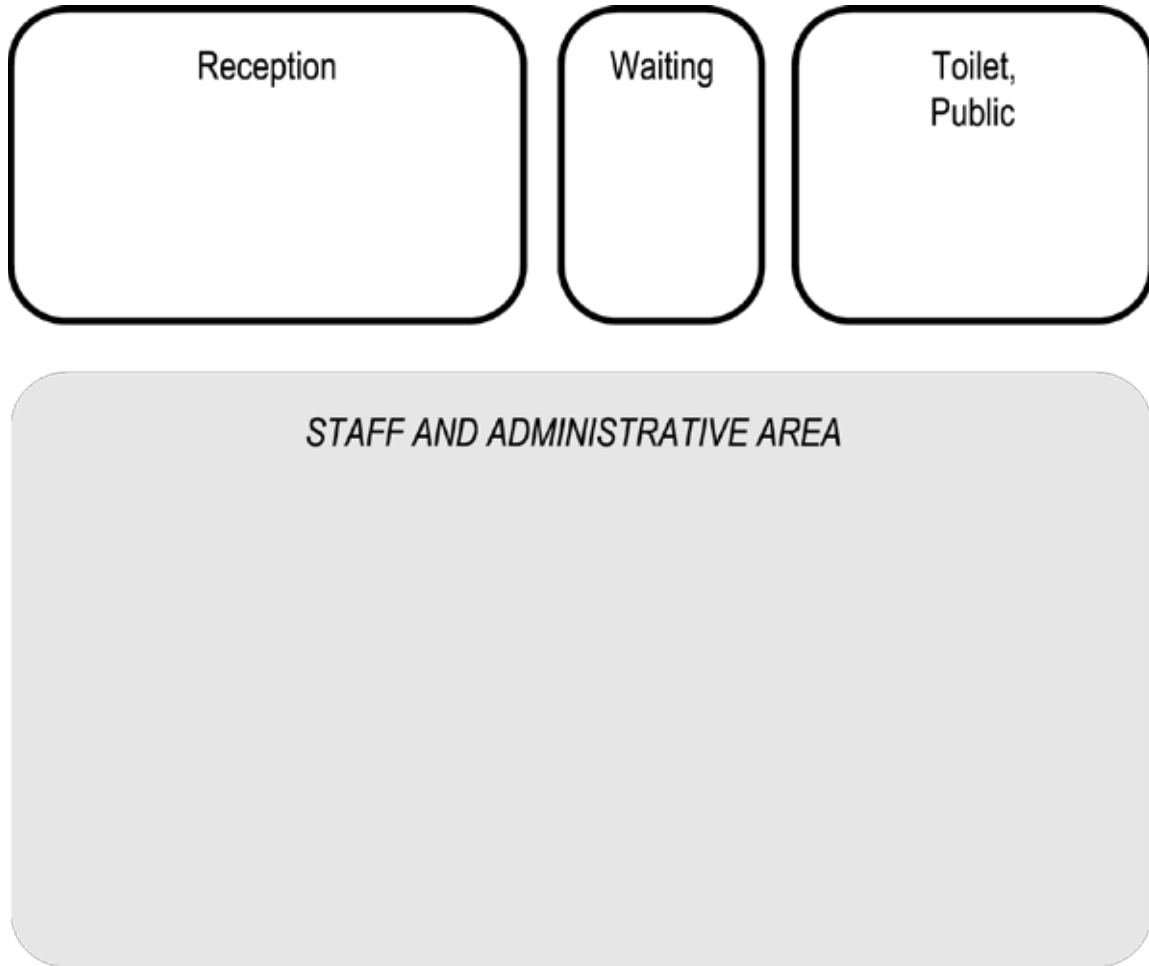
| Service | OIT Functional Areas | | | | |
|---|----------------------|------------------|------------------|--------------------|------------|
| | Computer | Computer Support | Telecom. Support | Reception & Admin. | Staff LLTS |
| Ambulatory Care (hospital based) | X | X | -- | X | X |
| AMMS (dock and receiving) | X | X | X | X | X |
| Clinical Services Administration | -- | -- | -- | 4 | 4 |
| Community Living Center (located at medical center) | X | X | -- | X | X |
| Day Hospital / Day Treatment | X | X | X | X | X |
| Digestive Diseases | X | X | X | -- | -- |
| Electroencephalography Laboratory | X | X | X | X | X |
| EMS Administration | -- | -- | -- | -- | -- |
| EMS Laundry | X | X | X | X | X |
| EMS LLTS | X | X | -- | -- | 3 |
| Engineering (Electrical Equipment Rooms - EMI sources) | X | X | X | X | X |
| Engineering (Mechanical Equipment Rooms - EMI sources) | X | X | X | X | X |
| Engineering (Energy Center – EMI sources) | X | X | X | X | X |
| Facilities Management Service (Engineering) (Admin and Shops) | X | -- | -- | 4 | 4 |
| Health Administration Service | -- | -- | -- | 4 | 4 |
| Human Resources Mgmt | -- | -- | -- | 4 | 4 |
| Intensive Care Nursing Units | X | X | -- | -- | -- |
| Interventional Radiology | X | X | X | -- | -- |
| Magnetic Resonance Imaging | X | X | X | -- | -- |
| Medical Center Director Suite | -- | -- | -- | 4 | 4 |
| MS&N Patient Care Units | X | X | -- | X | X |
| Nuclear Medicine (EMI sources) | X | X | X | -- | -- |
| Nursing Service Administration | -- | -- | -- | 4 | 4 |
| Nutrition and Food Service | X | X | -- | -- | -- |
| Pathology & Lab Medicine | X | X | -- | -- | -- |
| Radiology (EMI sources) | X | X | X | -- | -- |
| Research and Development (EMI sources) | X | X | X | -- | -- |
| Substance Abuse Clinic | X | X | X | X | X |
| Supply Processing and Distribution | X | X | -- | -- | -- |
| Surgery | X | X | X | -- | -- |
| Veterans Canteen Service | X | X | -- | -- | -- |

8 FUNCTIONAL DIAGRAM OIT

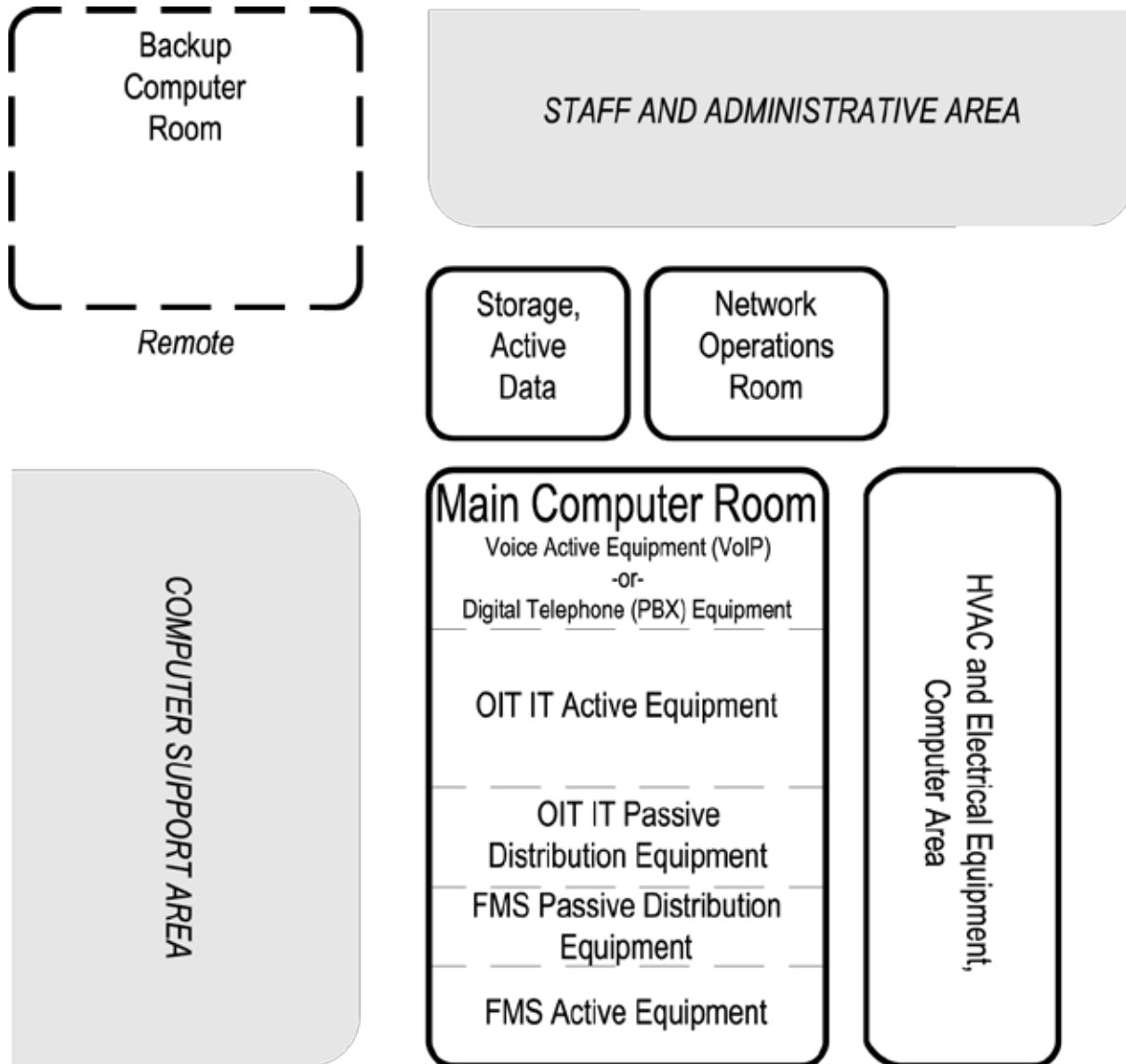


9 FUNCTIONAL AREA DIAGRAMS

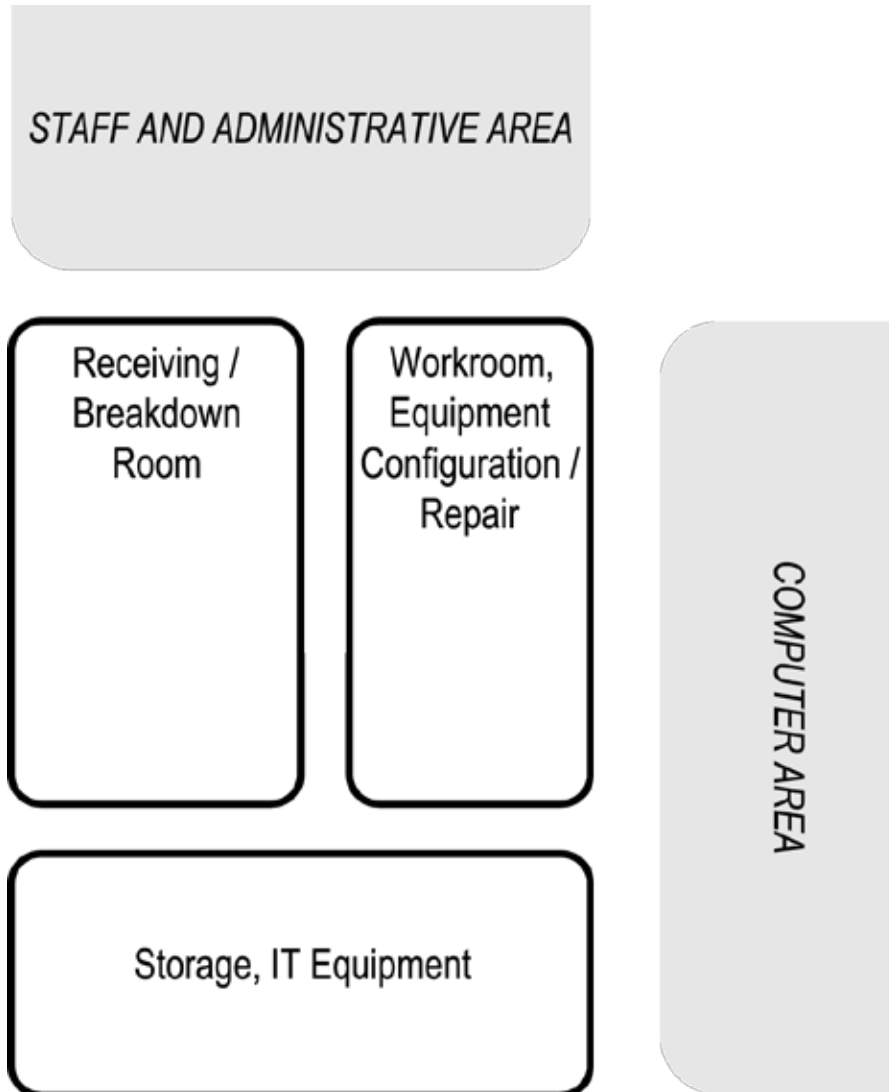
A. Functional Diagram: Reception Area



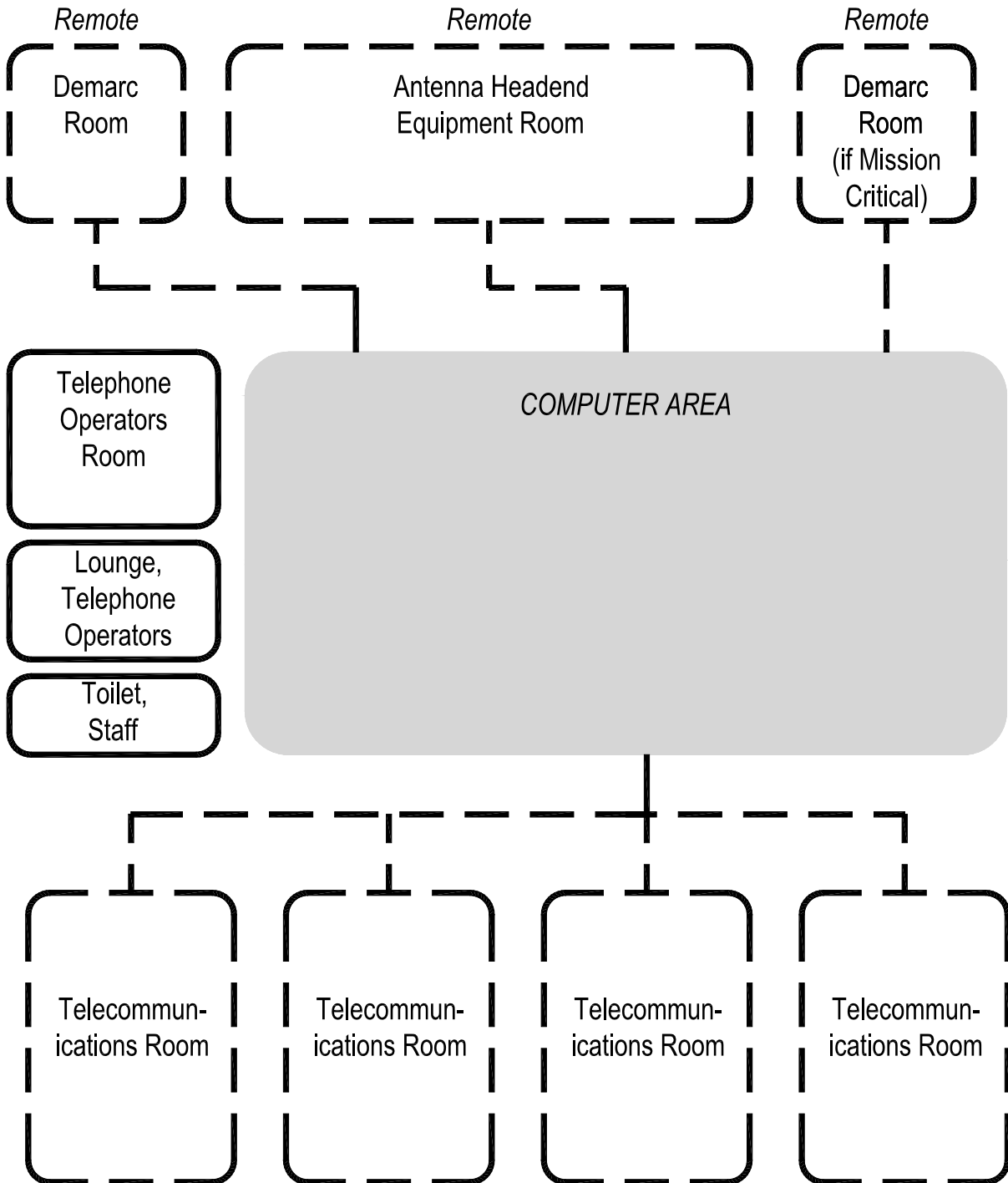
B. Functional Diagram: Computer Area



C. Functional Diagram: Computer Support Area

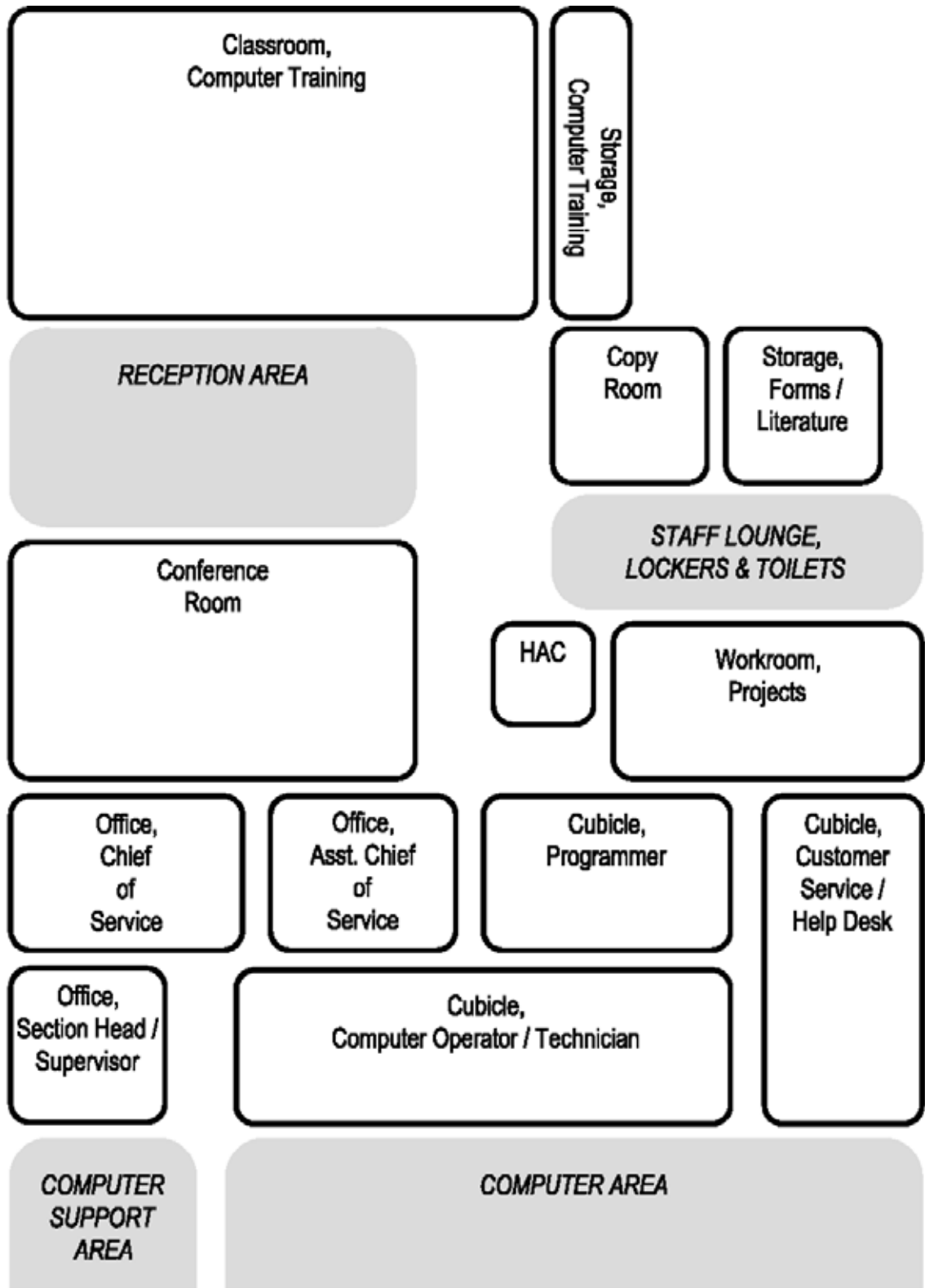


D. Functional Diagram: Telecommunications Support Area



Quantity of Telecommunications Rooms as required

E. Functional Diagram: Staff and Administrative Area



F. Functional Diagram: Staff Lounge, Lockers & Toilets

