

AUGUST 1, 2021
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Office of Information and Technology Infrastructure Standard for Telecommunications Spaces

NEW STANDARD(S): The following standard is added to the Technical Information Library (TIL):

- [Office of Information and Technology \(OIT\) Infrastructure Standard for Telecommunications Spaces v3.1 \(1 Jul 2021\) \(OIT “eye” “ess”, OIT IS\)](#)

OIT Data Center and Infrastructure Engineering (DCIE) is the originator of this standard.

Appendix B of the OIT IS, “Design Guide Templates for Critical Infrastructure in Telecommunications Spaces (Clinical and Non-clinical Environments)” are guide drawings referred to herein as “OIT Room Templates or “OIT RT”.

The OIT Standard is accessed via a link on the [Design Guides \(PG-18-12\)](#) web page, below the Office of Information & Technology heading.

IMPLEMENTATION: The OIT Standards:

- Must be utilized, and implemented to the maximum extent practicable, on new and existing projects during planning, design, and construction of all VA facilities;
- Become the primary standard for the technical content therein, and define best practices to enable the VA Enterprise Architecture for information technology; and
- Do not strictly supersede other TIL standards, due to differences in scope and the presence of conflicting criteria which require full consideration by the design team to resolve on a project-specific basis.

Project teams must:

- Proactively notify and engage OIT Data Center Infrastructure Engineering (DCIE)¹ using the contact information provided in the OIT IS;

¹DCIE replaces references to the Enterprise Data Center Infrastructure Collaboration Team (EDICT) in prior versions.

- Where conflicts arise between the OIT IS and other TIL standards, or for other technical conflicts/issues:
 - Document the conflict/issue;
 - Consult with DCIE and other project stakeholders to achieve best-value project-specific solutions;
 - Document deliberation and solution;
 - Maintain documentation in the project file; and
 - Provide copies of documentation to DCIE and the TIL feedback mailbox (til@va.gov) to facilitate lessons learned and standards evolution.

For editorial issues which do not have a technical effect, email the TIL feedback mailbox at the address above.

Known conflicts/issues which require careful coordination and evaluation include, but are not limited to:

- Room names, minimum floor area, height, layout and finishes;
- HVAC configuration; and
- Cable type.

Further details on these and other issues are provided in Attachment 1.

PURPOSE: To improve facility planning, design, and construction project team awareness of and access to the OIT IS. This will improve project planning, will eliminate or minimize re-design and associated cost and delay in latter project stages, and will ensure VA information technology (IT) infrastructure is well-positioned to leverage advancements in IT.

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ATTACHMENTS: The following provide more detailed information on specific technical issues; background on development of the OIT IS and telecommunications standards on the TIL, and future plans; policy excerpts establishing OIT authority to develop the OIT IS, and other related VA organizational authorities and responsibilities; and a list of references.

[Attachment 1 — Known Standards Conflicts and Other Issues](#)

[Attachment 2 — Background Information](#)

[Attachment 3 — Policy Excerpts](#)

[Attachment 4 — References](#)



REVISION LOG: This Alert was originally published on 25 Feb 2020. Revisions are summarized below. Only changes to the Alert are described. A detailed description of changes to the OIT IS is provided in the list of PG-18-12 OIT links on the TIL.

R01b 1 Aug 2021

- Minor editorial updates for publication of OIT IS v3.1 to the TIL, such as cited version number and date of publication.
- Attachment 4 – References | Fixed incorrect hyperlinks to VA Directives 6004 and 6051, and broken hyperlink to the EHRM Cabling Memo.
- Other minor editorial corrections.

R01a 1 Nov 2020 Reissuance and Errata

- 7 Oct 2020
 - Replaced incorrect file posted on 1 Oct 2020. See R01 notes below for intended changes.
- 1 Nov 2020
 - Corrected OIT Standards references in Attachment 4 References.
 - Other minor editorial changes.

R01 1 Oct 2020

- Updates for publication of OIT IS v3.0 (21 Aug 2020) to the TIL which replaces the following earlier versions:
 - Office of Information and Technology (OIT) Infrastructure Standards for Telecommunications Spaces v2.2 (19 Feb 2019) (OIT “eye” “ess”, OIT IS)
 - Office of Information and Technology (OIT) Design Guide Templates for Critical Telecommunications Spaces in Clinical and Non-clinical Environments v1.0 (27 Dec 2018) (OIT “room templates”, OIT RT)

Updates include:

- Reference to the new version.
- Collective designation “OIT Standards” is removed reflecting consolidation of OIT RT into Appendix B of OIT IS, a form which will continue in future versions. The designation OIT RT is preserved for use when necessary to reference only the Design Guide Templates.
- OIT contact office changed from EDICT to DCIE.
- Editorial coordination of citations and excerpts.



OIT INFRASTRUCTURE STANDARD FOR TELECOMMUNICATIONS SPACES

- Attachment 1 – Room Names and Room Codes, OIT Standards to TIL Telecom Standards Space/Room Comparison Tables | Corrected misapplication of “not a formal room name” comments to Telecommunications Rooms and Entrance Rooms by providing separate tables for these rooms.
- Added the Revision Log section to communicate significant changes in this and future updates.
- Other minor editorial changes.



Attachment 1 — Known Technical Conflicts And Other Issues

This attachment provides more detail on select known conflicts between the OIT IS and the major telecommunications program guides on the TIL, referred collectively herein as the TIL Telecom Standards:

- PG 18-9 Space Planning Criteria – Chapter 232 – Office of Information and Technology (OIT), October 2016
- PG 18-12 Design Guide – Office of Information and Technology (OIT), February 2011
- PG 18-10 Design Manual – Telecommunications and Special Telecommunications Systems, February 2016

In addition to the telecom standards above, there may be conflicting requirements with other TIL standards, such as PG 18-10 HVAC and Electrical Design Manuals, PG 18-1 Master Construction Specifications, etc.

Standards excerpts provided herein serve the purposes of narrative and reader convenience only, and do not supersede the actual standard text.

Conflicts/Issues

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Scope of Application

The scope of application refers to the facilities and project types to which standards documents, or specific criteria therein, are applied.

In general, in accordance with [Design Alert 148](#), TIL standards apply “In all phases of Planning, Design, and Construction, for all VA projects.” The Design Alert provides further detail on conditions for variances, and individual standards documents address other specific applications.

Regarding the TIL Telecom Standards, the scope of application is developed marginally further than the Design Alert:

- PG 18-9’s scope is limited to specific medical facility types only, but this is a legacy limitation, and in practice it is applied at all VA facilities where it addresses programmed space. It is silent on facility age (new, existing) and project type (new, major renovation, minor renovation, etc.).
- PG 18-12’s scope is limited to “assisting medical staff and contracting officers” and “OIT areas and spaces in VA...medical facilities”, but this is a legacy limitation, and in practice is referenced for guidance at all VA facilities where it addresses programmed space. For both new construction and renovation of existing Telephone Equipment Rooms, the standard specifically requires use of Main Computer Room standards.
- PG 18-10 provides guidance for existing facilities and systems scattered throughout. There are too many individual items to list here.

The scope of application of the OIT IS is similar to the TIL Telecom standards, and includes limited allowances for existing facilities scattered throughout:

- p.1, 1.2 Scope — The Standard shall be applied to all aspects of IT support infrastructure at all VA owned, operated, and leased spaces. “All aspects” includes, but is not limited to: planning, design, construction, sustainment (operations, maintenance, repair), restoration, modernization, and administration. “All VA facilities” includes but is not limited to VA Central Office (VACO) facilities and all field facilities managed by VA Administrations (Veterans Health Administration (VHA), Veterans Benefits Administration (VBA), and the National Cemetery Administration (NCA)).
- p.1, 1.3 Administration — Existing IT support infrastructure that does not conform to The Standards shall be brought into compliance during routine tech refresh, lifecycle replacement, upgrades, new installations, or renovations of existing space.
- p.2, 1.3 Administration — Facility managers should take every opportunity to bring telecommunications spaces into compliance with The Standards through incremental changes between scheduled sustainment activities.
- p.17, 4.1.2 Data Center Layout Standards — All data center design for new data centers, expansion, or significant modification of existing data centers will be approved through DCIE (VAITSEDatacenterEngineering2@va.gov).



- p.17, 4.1.2 Data Center Layout Standards, Implementation Guidance — This Standard applies to new data center and telecommunications space construction as well as expansion, modification, and operation of existing facilities.

Room Names and Room Codes

The TIL provides a Space and Equipment Planning System (SEPS) to assist facility planning. SEPS is a VA database and software tool for facility space and equipment planning which implements and is used in conjunction with narrative and graphical criteria found in PG 18-9 and PG 18-12. SEPS' master database is keyed to a standardized and coordinated list of Room Names and Room Codes to which design criteria are associated in SEPS and the Program Guides.

PG 18-9 and -12 group OIT rooms/spaces into six Functional Areas:

- Reception
- Computer
- Computer Support
- Telecommunications Support
- Staff and Administrative
- Staff Lounge, Lockers, and Toilets

Of these, the OIT IS addresses only three: Computer, Computer Support, and Telecommunications Support. The tables on the following pages compare room/space designations from the OIT IS to TIL Telecom Standards room names and room codes. The tables also include select TIL rooms or other areas which are not addressed by the OIT IS.

Project teams should establish project-specific designations for telecommunications spaces which avoid confusing facility staff and support design decisions. It may be necessary to have multiple designations for a room: planning/design room name/code, OIT IS data center classification, operational designation familiar to staff and coordinated with existing facility signage conventions, building code designation, and OIT datacenter program and inventory identifiers. Project teams should have a strategy to establish these associations and maintain consistency throughout the project drawings, design narratives, calculations, building information models, and other deliverables and administrative documents.

Within the functional areas addressed by the OIT IS, criteria for the following rooms are not provided:

- HVAC and Electrical Equipment Room, Computer Area
- Telephone Equipment
- Network Operations
- Storage, Active Data
- Storage, Temporary Data
- Storage, IT Equipment
- Receiving / Breakdown
- Workroom, Equipment Configuration / Repair



- Antenna Headend Equipment
- Telephone Operators
- Toilet, Staff
- Lounge, Telephone Operators

Project teams must solicit and document stakeholder feedback and consensus on space programs.

OIT IS TO TIL TELECOM STANDARDS SPACE/ROOM COMPARISON TABLES

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|---------------------------|--------------------|
| Computer Room | Main Computer Room | NA |

Comments: The OIT IS also uses Computer Room in a generic sense to refer to any room that has computer equipment. Therefore, in practice, “Computer Room” is not formally an OIT IS room designation. Facilities should maintain existing Main Computer Room designation. This may need to be re-evaluated should a Backup Computer Room be eliminated from the facility (see next row), in which case the modifier “Main” for the remaining room is unnecessary.

PG 18-12 OIT Design Guide p.1-8, definition item W defines the term “Information Technology Equipment Room” as “Used in 2003 and later editions of NFPA 75 in lieu of the term “computer room”. This is considered an abstraction for design and code application. Facilities are not required to use “Information Technology Equipment Room” as a room name.

The TIL Telecom Standards also treat this space as consisting of several different zones or areas which are assigned design criteria individually. Refer to PG 18-9 and PG 18-12 for more information.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|---------------------------|--------------------|
| Equipment Room | Main Computer Room | NA |

Comments: Equipment Room is not a formal room name. It is an ANSI/TIA designation for a level of the structured cabling system hierarchy.



| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|--|--------------------|--------------------|
| Health Care Facility Equipment Room | NA | NA |

Comments: This is not a formal room name. It is a room floor area/layout category in the OIT RT.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|-----------------------------|--------------------|
| NA | Backup Computer Room | ITBU1 |

Comments: The OIT IS envisions elimination of backup computer rooms, in accordance with Office of Management and Budget memoranda and Federal data center consolidation and optimization initiatives, and so do not provide standards for them.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|--|--|
| NA | VoIP Active Equipment Digital Telephone (PBX) Equipment OIT (IT) Active Equipment OIT (IT) Passive Distribution Equipment FMS Active Equipment FMS Passive Distribution Equipment | TEIP1 TEDP1 ITAE1 ITPE1 FMAE1 FMPE1 |

Comments: These are not room names. They are areas within a Main Computer Room (MCR). Floor areas for these spaces are calculated separately for planning purposes and combined to arrive at the area of the MCR. In contrast, the OIT IS sizes the Main Computer Room as a whole, following the design assumption that all equipment will be collocated in the same rack row, or otherwise intermixed by rack or in rack as necessary to maximize efficient utilization of IT equipment, physical space, energy, etc.



| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------------------|-------------------------------------|--------------------|
| Telecommunications Room (TR) | Telecommunications Room (TR) | TETR1 |

Comments: None.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Health Care Facility Telecommunications Room | NA | NA |

Comments: This is not a formal room name. It is a room floor area/layout category in the OIT RT.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---------------------------|--------------------------------------|--------------------|
| Entrance Room (ER) | Demarcation Room (aka Demarc) | TEDR1 |

Comments: None.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Health Care (Facility) Entrance Room | NA | NA |

Comments: This is not a formal room name. It is a room floor area/layout category in the OIT RT.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|--------------------|--------------------|
| Shallow Room | NA | NA |

Comments: Shallow Room is not a formal room name or other designation. Refer to the section “Room Occupancy – Shallow Rooms” for additional information.



| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|--------------------|--------------------|
| Closet | NA | NA |

Comments: In the TIL Telecom Standards, it is indicated that the term “Telecommunications Room” replaces legacy terms “Signal Closet” and “Telecommunications Closet”. In general, “Closet” is not a formal room name. The OIT IS similarly deprecates this term.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Enterprise Test/Development Data Centers | NA | NA |

Comments: This is not a formal room name, nor is it a formal data center category to which ANSI/TIA 942 Ratings and other design criteria are assigned. Instead, it is used to distinguish a facility, room, area, or equipment that is not currently used as “production” equipment for daily operations and is being prepared and/or evaluated for that purpose.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|--------------------------|--------------------|--------------------|
| Small Server Room | NA | NA |

Comments: Small server room is not a formal room name. It is a generic label for rooms with one-to-few racks of IT equipment which would be assigned to the Network Support Center data center category.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Distributor Room/ Enclosure Access Provider Space Service Provider Space | NA | NA |

Comments: These are not formal room names. They are functional descriptions of select ASHRAE Class B spaces.



| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|--|--------------------|--------------------|
| Main Distribution Area (MDA) Horizontal Distribution Area (HDA) Equipment Distribution Area (EDA) | NA | NA |

Comments: These are not formal room names. These designate locations within a facility, room, or space where distribution equipment is installed, such as a rack footprint or units within a rack.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|-------------------------|--------------------|--------------------|
| Data Center | NA | NA |

Comments: Data Center is an abstract functional designation assigned to a room or stand-alone facility for use in OIT data center program management activities. Spaces designated as data centers are assigned to one of the four data center types listed below and designed in accordance with the associated criteria. Although PG 18-12 does associate the term data center with the Main Computer Room only, the OIT IS applies the designation to Main Computer Rooms, Telecommunications Rooms, and other telecommunications spaces.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Core Data Center (CDC) Mission Support Center (MSC) Campus Support Center (CSC) Network Support Center (NSC) | NA | NA |

Comments: These are not room or space designations, so there are no equivalent designations on the TIL. These are classifications assigned to telecommunications spaces (computer rooms or telecommunications rooms) to which are associated various technical specifications for redundancy, environment, etc. Project teams should assign one of these designations to each telecommunications space as required by the OIT IS.



| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|---|--------------------|--------------------|
| Extra Small Data Center Small Data Center Medium Data Center Large Data Center | NA | NA |

Comments: These are not room names, so there are no equivalent designations on the TIL. These are select room floor area/layout categories used in the OIT RT.

| OIT IS Room Designation | TIL/SEPS Room Name | TIL/SEPS Room Code |
|--|--------------------|--------------------|
| Standardized Data Center Identification | NA | NA |

Comments: OIT IS 5.1.2 and 5.1.3 require assignment of standardized designations (FACILITYNAME, CITYTYPE, DCOI#, VA#) for use in the context of VA-wide data center program management and reporting to OMB on evolving federal data center initiatives, and program management of other IT spaces. In the context of projects, these designations are not room names used by facility personnel; they are abstractions.

Room Minimum Floor Area of Main Computer Room and Telecommunications Room

The minimum floor area of the Main Computer Room and the Telecommunications Room in PG 18-12 OIT Design Guide are “sized on the quantity of floor-mounted cabinets, racks, and trunk and backbone lines in and out required to support the number of anticipated subscriber ports and lines. The number of anticipated ports and lines has been related to the total net area of the building based on OIT field experience. The quantity of cabinets and racks allocated will support the IT equipment needed for the anticipated number of lines and ports, plus both a 50-percent expected expansion and space for anticipated systems redundancy.” (PG 18-12 p.2-3). These relationships were derived from field surveys during the development PG 18-12 and the associated PG 18-9 and PG 18-5. For specifics, refer to the excerpts at the end of this section.

OIT IS standards for minimum floor area of telecommunications spaces are communicated in the OIT RT. For Main Computer Rooms (i.e. data centers), several room templates representing a wide range of floor areas are derived from assumed equipment/capacity needs and application of OIT IS layout requirements. Similarly, several layouts for Telecommunications Rooms (TRs) and Entrance Rooms (ER) (i.e. Demarcs) are also provided. Minimum floor areas for these spaces also consider guidance in telecommunications industry standards (TIA, BISCI).



The OIT IS does not explicitly reserve space for wall mounted equipment, although some is shown on the room templates.

The differing basis for the TIL Telecom Standards and OIT IS can result in different minimum floor area requirements for telecommunications spaces.

TIL Telecom Standards, the OIT IS, and industry standard requirements for telecommunications room area, while differing in expression, are essentially equivalent. Strict adherence to OIT RT space requirements may be unconservative in some cases due to the absence of a reserved clearance for wall mounted equipment, and due to deferral to recommendations in industry standards.

Project teams must ensure spaces are programmed and executed with sufficient floor area to accommodate project-specific and anticipated future capacity and equipment, all specified clearances, door swings, wall mounted equipment, conduit penetrations, and all other potential consumers of floor area.

Key TIL Telecom Standards excerpts:

- PG 18-9 OIT Space Planning Criteria, p.12, 5.D.4
 - Provide one room with:
 - Minimum square footage is 20 net square feet (NSF) (1.9 net square meters (NSM)) 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 1,000 and 6,749 NSF;
 - Provide two rooms at 200 NSF if the total NSF of this facility is between 6,750 and 12,499 NSF;
 - Requires additional rooms at 200 NSF with increasing facility NSF.
- PG 18-12 OIT Design Guide, p.4-84, Telecommunications Room Floor Plan — Implements the PG 18-9 narrative:
 - Room dimensions between inside faces of perimeter walls are 18'-2" by 11'-0" resulting in a room area of 200 NSF (18.6 net square meters (NSM)), stated in the top right-hand corner of the graphic.
 - An asterisk (*) next to those numerical statements refers to a note at the bottom of the graphic which states "Minimum room size is 20 NSF for facility sizes below 1000 NSF. Room shown is for facility sizes 1000 NSF and larger."
 - Further, there is a note with several qualifications at the very bottom, one of which states "The design team is responsible to perform the calculations that determine the quantities as well as the location of each component for every project."



Key OIT IS excerpts:

- The narrative has no explicit minimum net square footage requirements, relying instead on the cited EIA/TIA standard and other constraints such as minimum aisle clearances, airflow management, and rack layout guidance (hot aisle / cold aisle), etc.
- 4.1 states “...TRs...shall be designed and operated in accordance with EIA/TIA-942 Ratings for each data center classification, except as detailed specification are provided in this and other VA data center facilities standards.”
- OIT RT
 - Sheet 5 – Detail 1 – Telecommunication Room Notes – Floor Space Requirements:
 - Minimum of 80 sq. ft. for a 1-rack TR.
 - Add an additional 20 sq. ft. per additional rack.
 - Minimum of 170 sq. ft. for a health care facility TR.

Key industry standards excerpts:

- EIA/TIA 942-B 4.1.a) states "Estimate...space...of the data center at full capacity [and] anticipated [expected] future...trends over the lifetime of the data center."
- EIA/TIA 942-B 6.4.2.2 states “The room shall be sized to meet the known requirements of specific equipment including proper clearances; this information can be obtained from the equipment provider(s). Sizing should include projected future as well as present requirements. See Annex D regarding data center space considerations.”
- ANSI/BICSI 004 and 007 contain the following best practices for telecommunications rooms:
 - TR shall be designed in accordance with the requirements of the standards being followed (e.g. NFPA 99, ANSI/TIA-1197-A...)
 - The minimum floor dimensions of a TR shall meet the requirements of the AHJ (e.g. NFPA 99). Where AHJ requirements are not present, the minimum floor dimensions shall be 4 m x 4.5 m (12 ft x 14 ft) [18 m² or 168 ft²].
 - If the TR is to support additional systems (e.g. building automation, nurse call, security, CATV, paging, intercom, or clinical systems) the TRs physical size shall provide adequate space for these additional systems. This may require additional physical space.
 - A growth factor of 50% of the systems and services being supported by the TR should be considered when determining the final physical size of the TR.
 - Some facilities do not allow placing medical or building systems in the TR. Where this restriction applies, medical and building systems shall be placed within a dedicated space adjacent to the TR.



- Room sizing shall take into consideration the wall mounting area required of each system.
 - Working space in front and behind racks, cabinets, and equipment shall be at least 0.9 m (3 ft).
 - Where systems, applications, and other requirements are not defined, TRs should be at least 4 m x 4.9 m (12 ft x 16 ft) [19.6 m² or 192 ft²].

Room Height

There are several standards in both the OIT IS and the TIL Telecom Standards which directly or indirectly affect minimum heights of computer and telecommunications rooms, or related parameters (e.g. ceiling height, minimum raised floor height, bottom of lights, cable tray clearances, equipment heights, presence/absence of ceilings, etc.), are specified.

Project teams should maximize room height within the context of other project constraints (existing vs new, construction cost, etc.) while being mindful that a goal of the OIT IS is to maximize HVAC efficiency by maximizing vertical temperature differential and the height of heat collection.

Room Layout – Separation of OIT and Veterans Health Administration (VHA) Medical Center Facilities Management Services (FMS) Equipment and Space

In the TIL Telecom Standards, for both the Main Computer Room (MCR) and Telecommunications Rooms (TR), OIT and FMS equipment are contained within a unified space, but there are requirements for separation of OIT and FMS equipment and for controlling access to FMS equipment.

In the MCR, TIL Telecom Standards require separate OIT and FMS entrances, and a fixed, full-height, non-airflow-restricting interior fence between FMS and OIT equipment to control access to FMS equipment by OIT personnel, and vice versa. It is unclear if the MCR interior fence is intended to separate OIT and FMS overhead cabling and cable support.

TRs do not require separate entrances, and equipment separation and interior fence are optional. Equipment separation is required only if lockable rack and cabinet enclosures are not used. If equipment is separated and the fence is provided, FMS access must be through OIT space, and the fence is limited in height to eight feet allowing overhead cable tray to pass.

In contrast to the TIL Telecom Standards, the OIT IS does not require equipment separation, anticipating collocation in rack rows or individual racks, and convergence of OIT and FMS systems on common equipment as technological advances enable virtualization and performance required to accommodate life-safety and clinical applications.

For each FMS information technology and telecommunications system affected by a project, project teams should evaluate and document the technological, regulatory, and operational feasibility of implementing the converged approach envisioned by the OIT IS. The starting point



for planning and design must be consolidated and continuous space, not physically separated space. Written justification and OIT approval is required for maintaining or constructing physically separated space.

Relevant excerpts from TIL Telecom Standards:

- PG 18-9 and PG 18-12 facilitate planning of space for OIT and FMS areas separately;
- PG 18-9 §2, pp. 3 & 4, and PG 18-12 Definitions, pp. 1-7 & 8, list systems allocated to FMS and OIT areas;
- PG 18-12 p.2-18 requires the Main Computer Room (MCR) to have “separate entrances to the FMS and OIT areas”, and the MCR is required to be “functionally divided into OIT space and FMS space by a non-removable fence which extends from the floor slab to the structure above. The fence should not restrict airflow.”;
- PG 18-12 p.2-21 requires Telecommunications Rooms to have separate conduit paths feeding the OIT and FMS equipment: “OIT conduits shall enter the OIT side of the TR, and FMS conduits shall enter the FMS side of the TR”.
- PG 18-12 p.2-22 requires Telecommunications Rooms “be functionally divided into OIT space and FMS space. An optional barrier with keyed gates (sliding or hinged) may be provided. The barrier may be removable.”
- PG 18-12 p.4-32 OIT Passive Distribution Equipment Area Floor Plan (a component of the MCR), illustrates the fence with a note stating “Wire Mesh Partition from top of access floor to underside of suspended ceiling, Master Construction Specification (MCS) 10 22 13”. This is repeated on the floor plan for the adjacent FMS Passive Distribution Equipment area.
- PG 18-12 pp.4-20 & 44 floor plans show the separate entrances for OIT and FMS equipment areas of the MCR.
- PG 18-12 pp.4-84 through 87 illustrate the TR fence requirement, and a note describing the fence on p.4-88 states “Optional Wire Mesh partition to 96”H with lockable, sliding, wire mesh gates (36”W x 93”H) at each opening. Provide separate OIT and FMS equipment if lockable enclosures are not used at racks or cabinets.”



Room Layout – Equipment Allowances and Clearances – General – MCRs and TRs

There are several different equipment clearance parameters, which in some cases vary between the TIL Telecom Standards and the OIT IS.

| Parameter | TIL Telecom Standards | OIT IS |
|--|--|--|
| End of Row - MCR | To perimeter wall: 4'-0" min 5'-0" max (PG 18-12 p.4-2) Expressed as a range to accommodate 12" conduit entry (floor penetration) clearance while maintaining the minimum 4'-0" clearance. | To perimeter wall - 3'-0" To HVAC and power distribution equipment – 4'-0" min (6'-0" recommended) Per manufacturer requirements Per AHJ for egress (OIT IS p.19, 4.1.2 Data Center Layout Standard, Table 9, ID 3 – Equipment Rows, Clearance) |
| Provided at Both Ends of Rows | See Discussion in Next Section | See Discussion in Next Section |
| Wall-Mounted Equipment Allowance – MCR – FMS Equipment Areas | 12" (PG 18-12 p.2-23) | None |
| Conduit Entry (Floor Penetration) Allowance at Perimeter Wall – MCR – OIT Passive Distribution Equipment | 12" (PG 18-12 p.4-32) | None |
| Wall-Mounted Equipment Allowance - TR | 12" (PG 18-12 p.2-22) | None |
| Clearance at Front and Rear of Racks – TR – To Wall-Mounted Equipment Allowance | 3'-0" | None |
| Minimum Aisle Width – MCR – Cabinets (Clearance from front and rear) | 4'-0" | In cold aisles - 4'-0" min In hot aisles - 3'-0" min (4'-0" recommended) (OIT IS p.18, 4.1.2 Data Center Layout Standard, Table 9, ID 1 – Aisles, Width) |



| Parameter | TIL Telecom Standards | OIT IS |
|---|---|---|
| Minimum Aisle Width – MCR – Racks (Clearance from front and rear) | 3’-0” | See MCR Cabinets Above |
| Alignment with 24” Grid (Access Floor Tile Layout, or Floor Markings) | <p>Access floor panel size “shall be 24 inches by 24 inches” (PG 18-12 p.2-11)</p> <p>There are no specific requirements or guidance to align equipment with the tile grid.</p> | <p>Yes – Front face of equipment (OIT IS p.18, 4.1.2 Data Center Layout Standard, Table 9, ID 1 – Aisles, Orientation; pp.88-91, 5.1 Data Center Position Identification)</p> |

Room Layout – Equipment Allowances and Clearances - Rack Rows Terminating Against A Wall

In the TIL Telecom Standards, PG 18-12 p.2-19 states “Rows of cabinets and racks are pushed to one wall of the MCR. There will not be circulation space around both ends of a row.” This is illustrated in PG 18-12 Floor Plans for each area of the MCR. PG 18-12 p.4-2 Figure 4.1 End Clearance Plan also has a note which states “[End clearance] required on at least one end of each row of cabinets, or racks.” This implementation of the requirement differs from the original written text in that it doesn’t prohibit clearance at both ends of the rack row.

In contrast, the OIT IS clearly prohibits rows terminating into a wall, in effect requiring clearance at both ends.^{2,3} The rationale for this is to:

- Facilitate rack installation and replacement by providing a gap between the end rack and the wall to allow dollies wider than the rack to access the rack;
- Minimize path length and transit time during maintenance and emergency egress;
- Accommodate redundant and symmetric overhead power and data cable tray layouts.

Room Finishes – Raised Access Floor and Slab Depressions

TIL Telecom Standards for the Main Computer Room distribute cold air to the face of rack rows through a raised access floor plenum (e.g. PG 18-12 p.2-14 Figs. 2.1 & 2.2). There is also a corresponding requirement for a structural slab depression of 24” (PG 18-12 Section 4, Room Design Standards), although DCIE reports that, in the course of their extensive site visits, slab depressions are rarely implemented, and flat slabs with raised access ramps are used instead.

² OIT IS p.18, 4.1.2 Data Center Layout Standards, Table 9, ID 3, Equipment Rows, Orientation

³ OIT RT, Floor Plans on Sheets 4 through 15 illustrate implementation of OIT IS 4.1.2.



In contrast, the OIT IS deprecates raised floors for new construction (OIT IS 4.1.1 Table 8, ID 1, Shell; and 4.3.6.3), requiring them only if justified by computational fluid dynamics (CFD) analysis. Reasons for deprecating raised access floor include:

- Capture cost savings;
- Eliminate requirements for slab depressions and association restrictions on location of space within a building;
- Improve access to network and power cables for installation, maintenance, and inspection;
- Overhead busways eliminate the need for licensed electrician to execute circuit changes;
- Improve efficiency through a heat containment configuration;
- Reduce seismic risk;
- Eliminate underfloor maintenance;
- Eliminate cooling losses due to drawdown or recirculation caused by venturi effects;
- Eliminate risk of airflow restriction caused by underfloor obstructions;
- Maximize space efficiency by eliminating ramps;
- Eliminate risk of structural deficiencies in the raised floor system.

In the event raised access floor is required, the OIT IS has extensive standards to optimize airflow.

PG 18-12 specifications for access floors (p.2-10 & 11), such as structural performance and ramp requirements, remain in effect, but must be reconciled with the OIT IS. For example, the higher rack and cabinet densities and capacities anticipated by the OIT IS may require increasing the minimum structural performance specifications in PG 18-12.

Room Finishes – Ceiling

TIL Telecom Standards require acoustical ceiling tile (ACT) for the majority of OIT spaces, with some additional space-specific criteria.

Standards in the OIT IS are mixed. The OIT IS does not explicitly prohibit suspended ceilings, but it does place restrictions on use of the above ceiling space and recommends removal of existing suspended ceilings. The OIT RT has stronger language and specifically prohibits suspended ceilings in newly constructed spaces.

In summary, the OIT IS is similar to the TIL Telecom Standards, with the exception that, in the strongest interpretation of OIT IS intent, suspended acoustic tile ceilings are prohibited in new computing spaces, and, in existing spaces, are recommended to be removed or converted to egg-crate/grate tiles.



TIL Telecom Standards Excerpts:

- PG 18-12 p.2-11 – Ceilings:
 - Where required for sanitation or moisture resistance, ACT should have a washable plastic (Mylar) finish.
 - In the Main Computer Room, and other rooms containing IT equipment, the ceiling finish should minimize dust and be light-colored to maximize light reflectance. Acceptable products include “Clean Room” type or Mylar-faced panels in an aluminum suspension system. Layout of the ceiling grid should align with the access floor system.
 - Suspended ceilings are not recommended in the Demarc Room(s), Telecommunications Room(s), and Antenna Headend Equipment Room.
- PG 18-12 Section 4, p.4-12 — Exposed ceilings are also specified for HVAC and Electrical Equipment rooms serving the Computer Area (includes Main Computer Room) and the Telephone Equipment Room.

OIT IS Excerpts:

- p.55 Table 24 ID 1 Room Height & p.57 4.3.6.1 – Legacy facilities are encouraged to maximize room height through removal of aesthetic suspended ceilings to maximize cooling efficiency.
- OIT RT Sheet 2 Architectural Notes – Ceilings: No suspended ceilings allowed.

Room Occupancy – Shallow Rooms

Shallow rooms are telecommunications spaces that have no or very little floor space, having a depth of a few feet (there is no formal definition for this space). Telecommunications conduit or equipment therein is generally within arms-length of the doorway, and, instead of dedicated lighting or HVAC, utilize services from the adjacent space (corridor, etc.).

TIL Telecom Standards are silent on this type of space, except as may be found in referenced codes and industry standards. The OIT IS restricts the use of these spaces as follows:

“VA shall not design or build “shallow rooms” or similar closets. Shallow rooms are intended for access to vertical chases and riser cables installed there only. Where a distribution TR is necessary in a location (i.e. the third floor of the west wing of a hospital), VA shall construct and operate out of a standardized TR.”⁴

The term shallow room does not include remote/satellite telecommunications rooms; those spaces which contain ad hoc telecommunications equipment enclosures and are approved by variance.

⁴ OIT IS p.19 4.1.2 Data Center Layout Standard, Implementation Guidance



HVAC Configuration

PG 18-12 provides HVAC standards for OIT spaces, such as room environmental parameters (temperature and relative humidity range), outside air percentage, and duct noise class.⁵ For MCRs in particular, it acknowledges the inefficiency of whole room air mixing and cooling, expresses a preference for separate and contained supply and return air, describes cold- and hot-air containment, and mentions other needs such as maintaining acceptable air pressure on IT equipment, preventing underfloor air dams, preventing short-cycling, proper tile selection, sealing access floor penetrations, and a potential need for computational fluid dynamics (CFD) analysis. Diagrams and room Design Standards indicate that use of both cold-air containment and hot-air containment is the basis-of-design.

Standards in the OIT IS are generally similar to the TIL basis-of-design and provide additional specifications and implementation details. Significant deviations from the TIL Telecom Standards include:

- Deprecation of access flooring from the default state to one requiring justification using CFD;
- Environmental conditions measured at the rack rather than room ambient air;
- More detailed equipment specifications (minimum tonnage, humidification system types, redundancy associated with data center rating, distribution of high-density racks, etc.)

Minimum Category Cable Rating

On the TIL, PG-18-10 allows Cat 5e, 6, and 6A for horizontal distribution⁶. It contains a recommendation for 5e, and an approval process for Cat 6 and 6A. Cat 6 and 6A are not explicitly prohibited. It does prohibit specific non-copper, copper-clad, and similar conductors.

The OIT IS requires Category 6A (Cat 6A) unshielded twisted-pair (UTP) cable for horizontal distribution (e.g. between telecommunications rooms and wall outlets). Factory terminations are preferred, but field terminations are permitted. The Cat 6A requirement is derived from recommendations for Category 6 (Cat 6) in ANSI/TIA-1179-A Health Care Facility Telecommunications Infrastructure. Cat 6A is specified to ensure reliable 10-gigabit-per-second Ethernet (GbE) data transfer rates over a greater length than Category 6 cable is rated for, to enable Power Over Ethernet (PoE), to enable high-bandwidth video applications, and to enable proliferation of wireless access points and devices. Existing Cat 6 cable is allowed with an approved variance.

Project teams must evaluate the technical requirements of the information systems and devices utilizing the horizontal distribution and select cable which provide best-value to VA. OIT

⁵ PG 18-10 HVAC Design Manual (Nov 2017 rev. Mar 2019) also provides HVAC criteria for OIT spaces. Refer to the data sheets on pp.6-103–8.

⁶ PG 18-10 3.2, Table 3.1



DCIE must be included in any TIL-specified approvals process where there are criteria overlaps. Project teams are encouraged to consider future demands which may arise within a reasonable period after completion of the project when making best-value decisions.

For projects associated with the Electronic Health Records Modernization (EHRM) program, cabling must be determined in accordance with the Electronic Health Records Modernization Cabling Infrastructure Memorandum dated 23 September 2019. This can be obtained on the [OEHRM Collaboration Site](#), a VA intranet site.

Reliability and Redundancy

The TIL Telecom Standards specify data service reliability using the Uptime Institute four-level Tier system. In contrast, the OIT IS utilizes ANSI/TIA 942 Ratings. Neither require certification. Project teams must follow the OIT IS and utilize ANSI/TIA 942 Ratings. VA self-certifies utilizing the TIA checklist.

Manufacturer-Specific Equipment

The OIT RT contains manufacturer-specific equipment data. These, and any other manufacturer-specific requirements that may be present in the OIT IS, are mere examples to illustrate implementation of written performance requirements. Neither the written performance requirements, nor the equipment data, are intended to require sole-source or otherwise non-competitive acquisitions which do not provide best-value to VA. In the event project teams encounter requirements which may unnecessarily restrict competition and hinder best-value solutions, the TIL maintainers and relevant subject matter experts identified in the standards publications must be notified so they may advise on the project-specific issue and plan for standards updates.



Attachment 2 — Background

This attachment provides detail on the authorities and responsibilities of OIT and CFM and their interaction, development of the OIT IS, development of TIL Telecom Standards, and plans to further develop OIT and TIL Telecom standards.

Office of Information and Technology

OIT is led by the Assistant Secretary for Information and Technology and Chief Information Officer (AS/CIO). The VA CIO is a statutory position created by the Information Technology Management Reform Act of 1996⁷ (ITMRA96). ITMRA96 also assigned the VA Secretary authority over various aspects of information technology including capital planning and investment control, performance and results-based management, and acquisition; and it assigned the VA CIO duties to advise the Secretary on those issues, as well as execute various information resource management responsibilities, to include developing VA's information technology architecture.

The authorities and responsibilities of the CIO, and the scope and structure of OIT, have since evolved through the issuance, revision, application, and rescission of various Public Laws, Executive Orders, Office of Management and Budget (OMB) Memoranda, VA Memoranda and Directives, and other instruments of federal and agency policy. The latest non-VA instruments driving VA and OIT policy relevant to the OIT IS include:

- The Federal Information Technology Acquisition Reform Act (FITARA)⁸
- OMB Memorandum M-15-14, Management and Oversight of Federal Information Technology, June 10, 2015
- OMB Memorandum M-16-19, Data Center Optimization Initiative (DCOI), August 1, 2016
- OMB Memorandum M-17-26, Reducing Burden for Federal Agencies by Rescinding and Modifying OMB Memoranda, June 15, 2017

These are implemented through the following VA policies relevant to the OIT IS:

- Directive 6008 Acquisition and Management of VA Information Technology Resources
- Directive 6051 Enterprise Architecture
- Directive 6004 Configuration, Changes, and Release Management Programs

6008 establishes CIO authority and responsibility over “all information-related assets that are part of or interact with VA's information networks, services, and capabilities.” “information-related assets” is not formally defined in 6008, but, by review of the formally defined terms

⁷ Pub. L. 104-106, National Defense Authorization Act of 1996, Division E

⁸ Pub. L. 113-291, National Defense Authorization Act for Fiscal Year 2015, Title VIII, Subtitle D, December 12, 2014
— Established VA CIO as a presidential appointee to establish parity with the VA CFO.



therein (e.g. information technology, IT-related, IT Infrastructure, etc. in §5), the intent is clear that **CIO authority over all VA information technology is comprehensive and without exception**. Information technology classifications in 6008 (e.g. IT, non-IT, clinical, medical devices, facility equipment, construction, etc. in §2) apply to sources of funding only, and not CIO authority.

Select provisions from these policies relevant to development and implementation of the OIT IS, and VA organizational authorities and responsibilities for various aspects of information technology and telecommunications, are provided in Attachment 3.

Office of Construction and Facilities Management

The Office of Construction and Facilities Management (CFM) is led by an Executive Director, a statutory, career-reserved appointee of the Secretary (SECVA) reporting directly to the Deputy Secretary (DEPSECVA). This position was created by the Veterans Benefits, Health Care, and Information Technology Act of 2006 (Pub. L. 109-461), and is “responsible for overseeing and managing the planning, design, construction, and operations of [VA facilities and infrastructure,] including major and minor construction projects”, and **has a specific responsibility for “determining architectural and engineering requirements...”**. The Facilities Standards Service, within CFM’s Office of Facilities Planning, is the primary executor of this specific responsibility, and does so through the publication of standards on CFM’s Technical Information Library (TIL).

OIT IS

The OIT IS is currently authorized under specific CIO responsibilities defined in VA Directive 6008 to:

- “Ensure all VA information resources...are compliant with enterprise...standards...” [3.a(3)(d)]
- “Provide visibility through VA’s enterprise architectures to all...standards...to guide VA IT item design, acquisition, development, and deployment.” [3.a(3)(e)]
- “Develop, maintain, and assure completeness and proper use of standard IT configurations.” [3.a(3)(f)]
- “Oversee and collaborate with VA stakeholders at the local level...” [§3.a(3)(h)]

The OIT IS precedes 6008. It was initially developed in 2007 in response to a national data center consolidation initiative. Further development, in preparation for VA obligations under the Federal Data Center Consolidation Initiative (FDCCI) initiated in February 2010⁹, culminated in v1.0 in 2012. In response to issuance of Directive 6008 in August 2016, significant revisions

⁹ Federal CIO Memorandum February 26, 2010

https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/egov_docs/federal_data_center_consolidation_initiative_02-26-2010.pdf



were initiated by DCIE and are ongoing. This period also saw the development of the OIT RT. OIT IS v2.2, formally issued April 10, 2019, is the latest version approved by OIT and available for VA use.

The OIT IS is a special case in several respects:

- VA Enterprise Architecture baselines and standards typically establish approved uses and configuration of IT hardware, software, and other specific IT technologies or processes. In contrast, the OIT Standards provide criteria for space and other aspects of facilities design.
- OIT is the only VA business unit which develops, publishes, and maintains detailed facilities requirements independently of CFM. This unusual situation is created by the rapid pace of change of IT infrastructure technologies and best practices within VA and throughout the information technology and health sectors, and by natural overlaps in OIT and CFM authorities, responsibilities, and expertise.
- The OIT IS is also published in the Information Technology Operations and Services (ITOPS) [Baseline and Configuration Management](#) document repository and the [VA Technical Reference Model \(TRM\)](#), VA intranet sites with limited exposure to project stakeholders.

Despite the authority of OIT to develop and promulgate the OIT IS, project personnel are accustomed to relying on the TIL Telecom Standards, consistent with CFM's more specific authority over architectural and engineering requirements. Posting the OIT IS on the TIL is an effort to increase their prominence and authority, promote project personnel awareness, and require utilization and DCIE participation from the earliest project planning stages. It is a stopgap to address an urgent need pending a more comprehensive effort toward full TIL integration.

Looking Ahead

Future alerts are anticipated as updates are made to the OIT IS, TIL Telecom Standards, and VA policies. Known short- and medium-term issues include:

- Post-v3.1 updates to the OIT Standards, annually or as issues arise.
- Coordination with a pending PG 18-10 Fire Protection Design Manual update.
- Updates to VA policies to implement OMB Memorandum M-19-19, Update to Data Center Optimization Initiative (DCOI), 25 June 2019.
- Project to integrate the OIT IS into the TIL.

Long-term issues include:

- Establish a program of regular updates to TIL information technology and telecommunications standards which are well-coordinated with development of the OIT IS.



Attachment 3 — VA Policy Excerpts

Below are select VA policy excerpts relevant to this Standards Alert and which define organizational authorities and responsibilities. Those planning and managing work which requires the OIT IS, or otherwise have an information technology component, must thoroughly review and understand the complete policies, and the terms and definitions therein.

OIT

- Directive 6008
Acquisition and Management of VA Information Technology Resources
 - “As the statutorily accountable official for the management and security of all of VA’s information resources, including VA operational information and associated resources such as personnel, equipment, funds, and IT, VA’s Chief Information Officer (CIO) has authority over all information-related assets that are part of or interact with VA’s information networks, services, and capabilities.” [1.]
 - Section 2. Policy is entirely about funding such as which items/service fall into IT and non-IT buckets, and definition of specific cases (Direct Medical Systems, Equipment, or Devices (DMSED), Facility Equipment, Construction Projects, etc.). This is distinct from authority and responsibility, which are covered in Sections 1 and 3.
 - “The Assistant Secretary for Information and Technology, as the Department’s CIO, in planning, managing, and overseeing the VA’s information resources, shall:” [3.a]
 - “Design, develop, implement, and maintain a VA IT governance structure to:” [3.a(3)]
 - “Ensure all VA information resources, including those funded outside the IT appropriation, are compliant with enterprise policy, rules, standards, and guidance related to IT, information management (IM), and information security (IS).” [3.a(3)(d)]
 - Provide visibility through the VA’s enterprise architecture to all policy, rules, standards, guidance, and configurations necessary to guide VA IT item design, acquisition, development, and deployment.” [3.a(3)(e)]
 - “Develop, maintain, and assure completeness and proper use of standard IT configurations.” [3.a(3)(f)]
 - “Oversee and collaborate with VA stakeholders at the local level to ensure that IT-related capabilities funded and deployed at local



sites are appropriately vetted and formally (sentence incomplete, ends abruptly).” [3.a(3)(h)]

- “Under Secretaries, Assistant Secretaries, and Other Key Officials will:” [3.b]
 - “Ensure all VA IT and non-IT items/services which connect to any VA Network are subject to rules, standards, and oversight processes as prescribed by the VA CIO in order to comply with information assurance, accessibility, security, privacy, and enterprise architecture standards.” [3.b(1)]
 - “Integrate compliance with this policy within establish decision processes in which they oversee or participate;” [3.b(2)]
- Directive 6051
Enterprise Architecture
 - “Enterprise architecture is a strategic information asset base, which defines the Department’s mission; the information and technologies necessary to perform the mission; and the transitional processes for implementing new technologies in response to changing mission needs. It includes a baseline architecture...” [2.a]
 - “All VA IT systems and investments must comply with the Department’s Enterprise Architecture (EA).” [2.b]
- Directive 6004
Configuration, Changes, and Release Management Programs
 - “The purpose of this Directive is to establish Department-wide Configuration, Change, and Release Management Programs in compliance with the Federal Information Security Management Act of 2002 (FISMA), 44 USC §3541-3549, and Pub. L. 107-347, Title III, and VA Directive and Handbook 6500, Information Security Program, to provide Configuration, Change, and Release Management processes...This directive applies to all VA related components and information technology resources, including contracted IT systems and services.” [1]
 - “Configuration, Change, and Release Management Programs will be implemented and maintained by [OIT]”. [2.a]
 - “...each VA system owner must document, implement, and maintain Configuration, Change, and Release Management plans and processes.” [2.b]
 - “[Document and maintain] the configuration baseline(s) applicable to the deployed system.” [2.b(1)]



Attachment 4 — References

(Alphabetical by type, ascending; then chronological or document number, ascending)

The references below were instrumental toward developing this Standards Alert and establishing context.

Office of Construction and Facilities Management (CFM) — Technical Information Library (TIL) Standards

PG 18-5 Equipment Guide List – Chapter 232 – Office of Information & Technology (Aug 2016)

<https://www.cfm.va.gov/til/equip.asp>

PG 18 -9 Space Planning Criteria – Chapter 232 – Office of Information & Technology (Oct 2016)

<https://www.cfm.va.gov/til/space.asp>

PG 18-12 Design Guide – Office of Information & Technology (Feb 2011)

<https://www.cfm.va.gov/til/dguide.asp>

PG 18-10 Design Manual – Telecommunications and Special Telecommunications Systems
(Feb 2016)

<https://www.cfm.va.gov/til/dManual.asp>

TIL Homepage

<https://www.cfm.va.gov/til/index.asp>

Office of Information and Technology (OIT) Standards

Infrastructure Standard for Telecommunications Spaces v3.1 (1 Jul 2021)

<https://www.cfm.va.gov/til/dguide/OIT-InfrastrucStdTelecomSpaces.pdf>

Office of Management and Budget (OMB) Memoranda

M-96-20 Implementation of the Information Technology Management Reform Act of 1996
(4 Apr 1996)

<https://www.whitehouse.gov/wp-content/uploads/2017/11/1996-M-96-20-Implementation-of-the-Information-Technology-Management-Reform-Act-of-1996.pdf>

M-97-02 Funding Information Systems Investments (25 Oct 1996)

<https://www.whitehouse.gov/wp-content/uploads/2017/11/1997-M-97-02-Funding-Information-Systems-Investments.pdf>



M-97-16 Information Technology Architecture

<https://www.whitehouse.gov/wp-content/uploads/2017/11/1997-M-97-16-Information-Technology-Architectures.pdf>

M-15-14 Information Technology Architectures (18 Jun 1997)

<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2015/m-15-14.pdf>

Rescinded by M-17-26, Reducing Burden for Federal Agencies by Rescinding and Modifying OMB Memoranda, issued June 15, 2017.

M-16-19 Data Center Optimization Initiative (DCOI)

https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2016/m_16_19_1.pdf

M-19-19 Update to Data Center Optimization Initiative (DCOI) (25 Jun 2019)

<https://www.whitehouse.gov/wp-content/uploads/2019/06/M-19-19-Data-Centers.pdf>

Public Laws

Clinger-Cohen Act See Public Law 104-106 and Federal Acquisition Reform Act

104-106 National Defense Authorization for Fiscal Year 1996, Division E,
Information Technology Management Reform (Feb 1996)

aka

Information Technology Management Reform Act of 1996

<https://www.govinfo.gov/content/pkg/PLAW-104publ106/html/PLAW-104publ106.htm>

107-347 Federal Information Security Modernization Act of 2002 (FISMA2002)

<https://www.govinfo.gov/app/details/PLAW-107publ347/>

109-114 Military Quality of Life and Veterans Affairs Appropriations Act, 2006

<https://www.govinfo.gov/content/pkg/PLAW-109publ114/html/PLAW-109publ114.htm>

Establish the VA Information Technology Systems appropriation, into which IT resources from VHA, NA, and VBA were consolidated.

109-461 Veterans Benefits, Health Care, and Information Technology Improvement Act

<https://www.govinfo.gov/app/details/PLAW-109publ461>



113-283 Federal Information Security Modernization Act of 2014 (FISMA2014)

<https://www.govinfo.gov/app/details/PLAW-113publ283>

113-291 National Defense Authorization Act (FY2015) (NDAA2015)

<https://www.govinfo.gov/app/details/PLAW-113publ291/>

113-291 Title VIII, Subtitle D

Federal Information Technology Acquisition Reform [Act] (FITARA)

<https://www.govinfo.gov/app/details/PLAW-113publ291/>

VA Budget Requests and Congressional Hearings; GAO Reports; OIG Reports

While specific citations and excerpts are not provided herein, these publicly available records provided valuable background on the evolution of OIT authority and organization, from Public Law 104-106 to present.

VA Directives

6004 Configuration, Changes, and Release Management Programs (28 Sep 2009)

https://www.va.gov/vapubs/viewPublication.asp?Pub_ID=458&FType=2

6008 Acquisition and Management of VA Information Technology Resources
(02 Nov 2017)

https://www.va.gov/vapubs/viewPublication.asp?Pub_ID=891&FType=2

6051 Department of Veterans Affairs (VA) Enterprise Architecture (08 Apr 2016)

https://www.va.gov/vapubs/viewPublication.asp?Pub_ID=830&FType=2

VA Electronic Health Records Modernization (EHRM) Policy

Cabling Infrastructure Memorandum (23 Sep 2019)

<https://dvagov.sharepoint.com/sites/VHAOCAMESEHRM/VHA%20Site%20Assessment%20Resources/Forms/AllItems.aspx?id=%2Fsites%2FVHAOCAMESEHRM%2FVHA%20Site%20Assessment%20Resources%2FGuides%20and%20Checklists%2FMemorandums%2FCable%20Memo%20Signed%2Epdf&parent=%2Fsites%2FVHAOCAMESEHRM%2FVHA%20Site%20Assessment%20Resources%2FGuides%20and%20Checklists%2FMemorandums>

This is an access-controlled VA intranet site.

