

Document Name: Technical Standards for Public Fixed Telecommunications Networks (August 2020)

Appendix II – Decisions on Recommendations (DoRs) Matrix for Second Consultation Round

The following summarises the comments and recommendations received from stakeholders on the *Consultative Document on Technical Standards for Public Fixed Telecommunications Networks* (Second Round) and the decisions made by TATT to be incorporated in version 1.0 of the document.

	Policy Section	Stakeholder	Comments	Recommendations	TATT’s Decision
1	General	TSTT	<p>Telecommunications Services of Trinidad and Tobago Limited (TSTT) appreciates that the Telecommunications Authority of Trinidad and Tobago (TATT) has provided the opportunity for operators to comment on these matters. It should be noted that the comments expressed by TSTT on this document, in no way restrains TSTT from making further comments in the future.</p> <p>TSTT notes in the Decisions on Recommendations (DoRs) that TATT has agreed to amend some of the standards proposed, to be less technology-specific (particularly in relation to Optical Transport Network’s). TSTT applauds this change in approach as technology-</p>		<p>The Telecommunications Authority of Trinidad and Tobago (the Authority) appreciates TSTT’s review of the document and its comments and recommendations.</p> <p>The Authority appreciates TSTT’s comment. The Authority will continue to abide by its <i>Guiding Principles for Regulatory Decision Making</i>.</p>

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			neutrality has been a constant hallmark of appropriate regulatory formulation in the Trinidad and Tobago telecommunications and broadcasting sectors.		
2	Introduction	CCTL	<p>In general, CCTL supports efforts towards the establishment and implementation of technical standards to mitigate against disaster events, which are consistent with international best practices and reasonable within the local context.</p> <p>Operators have a vested interest in ensuring that networks meet international standards and can withstand natural and man-made disasters.</p> <p>Market competition also act as an incentive to ensure operators maintain and or surpass the industry standards.</p> <p>We consider that a collaborative approach with the Authority and network operators would be more effective in establishing and monitoring industry standards.</p>	We recommend that TATT employs a collaborative framework to establish and monitor industry standards.	<p>The Authority appreciates CCTL's review of the document and its comments and recommendations.</p> <p>The Authority agrees with CCTL that a collaborative effort between the Authority and the operators to establish these technical standards is preferable. CCTL will recall that these technical standards were developed via discussions between members of a Technical Working Group (TWG) comprising representatives from the Authority, as well as representatives from the fixed line operators who are familiar with the aspects of a public fixed telecommunications network for which the technical standards were developed.</p>

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					The Authority will also seek to maintain a collaborative approach with operators in the monitoring of compliance with the established standards.
3	1.6 Relevant Legislation	CCTL	<p>TATT cites S 18(1)(d) of the Act, to support setting technical network standards for fixed public telecommunications networks. It states,</p> <p><i>“Subject to the provisions of this Act, the Authority may exercise such functions and powers as are imposed on it by this Act and in particular – Establish national telecommunications industry standards and technical standards.”</i></p> <p>The use of the phrase <i>“the Authority may exercise such functions and powers,”</i> means that TATT is allowed to establish technical industry standards, as opposed to TATT must establish industry standards. We believe this is an important distinction given the nature of the matter being addressed.</p>		<p>The document has both mandatory and discretionary standards. Mandatory standards are standards that concessionaires must comply with, whilst discretionary standards are standards that should be complied with unless there are valid reasons for not complying. An example of a valid reason is the lack of consent of the landowner to trim overhanging branches in discretionary standard 14. More detailed descriptions of mandatory and discretionary standards, as used in this document, are found in section 1.11 in version 1.0 of the document.</p> <p>Members of the TWG collectively agreed to the</p>

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			<p>To inform our position we also take into account the other relevant provisions of the Act.</p> <p>As we pointed out in our round 1 response, Part V, section 45(1) also deals with establishing technical standards, and states,</p> <p><i>“Subject to the other provisions of this Act, concessionaires and licensees may implement such technical standards as they deem appropriate and which are in conformity with accepted international standards.”</i></p> <p>Section 45(2) further states <i>“Notwithstanding subsection (1), the Authority may identify, adopt or establish preferred technical standards.”</i></p> <p>We accept that the Act allows TATT to establish technical industry standards, and to adopt or establish preferred standards. However, CCTL is of the considered view that taking account of the following;</p>		<p>establishment of mandatory standards. Determining technical standards in collaboration with operators ensures that operators are part of the process of standards setting and thus aids in the establishment of agreed standards.</p> <p>The mandatory standards defined in the document are based on both international and local industry best practice. An example of another regulator that utilises mandatory standards is the Federal Communications Commission (FCC).</p> <p>Furthermore, the consultative document ‘<i>Quality of Service Standards and Guidelines for the Telecommunications Sector (2010)</i>’ issued by the Office of Utilities Regulation (OUR), Jamaica includes technical standards. Throughout the OUR document, requirements are signified using “shall” and</p>

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			<p>i. The language and intent of the Act does not raise to the level of mandating technical standards;</p> <p>ii. The existence of global telecommunications standards bodies such as the International Telecommunications Union (ITU);</p> <p>iii. The fact that most if not all the standards are adopted are based on ITU recommendations.</p> <p>CCTL does not see the need for mandating technical network standards. The industry would be better served by using a collaborative approach to establish and maintain such standards.</p>		<p>recommendations are signified using “should”.</p> <p>This compares to the Authority’s mandatory standards which use “shall” and discretionary standards which use “should”.</p>
4	1.9 Definitions “Access Network”	TSTT	TSTT acknowledges the removal of the term “local exchange” from the definition of “access network”.	TATT to clarify the following points: 1. Is the local line distribution	The Authority clarifies as follows: 1. Yes, the local line distribution network is

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			<p>TSTT is however puzzled by the reference “replacing... the local line distribution network”.</p> <p>TATT to clarify the following points:</p> <ol style="list-style-type: none"> 1. Is the local line distribution network considered to be part of the access network? 2. Is it that only systems that replace the local line distribution network is to be considered the access network? 3. What makes a point on the Core Network “suitable” for establishment of the access network? <p>TATT has made some strides in making the definition technology-neutral, but it has to further review the definition to make clear what it is trying to include and exclude.</p>	<p>network considered to be part of the access network?</p> <ol style="list-style-type: none"> 2. Is it that only systems that replace the local line distribution network are to be considered the access network? 3. What makes a point on the Core Network “suitable” for establishment of the access network? 	<p>considered part of the access network.</p> <ol style="list-style-type: none"> 2. No, the access network includes the local line distribution network and may also include active electronics. 3. Factors that make a point on the core network suitable for establishment of the access network include the technology utilised, the topology of the network, local conditions and other operator considerations. <p>A more technologically neutral term “suitable end point” was used in the document, to cover</p>

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					the various fixed technologies that are deployed in Trinidad and Tobago. Examples of suitable end points on a core network are points of presence (POPs), a switch or head-end node. The definition of access network was amended in version 1.0 of the document, as follows: “Access network: a system deployed between a suitable end point on the core network and user premises, replacing part or the whole of the local line distribution network. An example of a suitable end point is a switch.”
5	1.11 Compliance Notation Mandatory Standards	CCTL	In the section, “Compliance Notation”, TATT has introduced the term “ <i>mandatory standards</i> ”, with the notation “ <i>The concessionaires shall comply fully with the standards specified.</i> CCTL has several issues		Members of the TWG agreed to the establishment of mandatory standards. Determining technical standards in collaboration with operators ensures that operators are part

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			<p>with this development. As noted above we do not believe the language and intent of the Act raise to the level of mandating technical industry standards.</p> <p>The Concise Oxford English Dictionary defines the word “standard” as “a level of quality or attainment or a required or agreed level of attainment.”</p> <p>ITU technical network standards inform most if not all the proposed technical standards in the consultation document. In explaining its approach to setting standards, the ITU states,</p> <p><i>¹ITU standards are voluntary technical standards – conformance to these standards is not mandatory unless such conformance is mandated by national law. Although implementation is voluntary, the approval of ITU standards by consensus helps to achieve the buy-in of all stakeholders, increasing the</i></p>		<p>of the process of standards setting and thus aids in the establishment of agreed standards.</p> <p>In the area of technical standards, the ITU's recommendations serve as guidance for member countries to consider and adopt accordingly. Therefore, the expectation is for members to consider such guidelines in the establishment of national</p>

¹ <https://www.itu.int/en/mediacentre/backgrounders/Pages/itu-t-setting-the-standard.aspx>, accessed October 22, 2019.

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			<p><i>likelihood that these standards will be implemented worldwide.”</i></p> <p>We believe that a similar consensus approach could be adopted in Trinidad and Tobago.</p> <p>It is noteworthy the while the notation states that operators shall comply with the mandatory technical standards, no information is provided about a compliance framework. If there is no compliance framework, then it begs the question as to how compliance will be monitored.</p>	<p>We recommend that a collaborative framework including the Authority and network operators be</p>	<p>standards. The mandatory standards defined in the document are based on both international and local industry best practice.</p> <p>Section 43 of the Telecommunications Act, Chap. 47:31 (the Act) requires that the Authority take into account:</p> <p>“(d) the Convention; (e) any applicable international standards, conventions and other agreements; and (f) any other relevant matters having regard to the circumstances of the case.”</p> <p>The Authority is empowered under the Act to identify, adopt or establish preferred technical standards.</p> <p>Operators’ compliance with these technical standards will be monitored through regular audits conducted by the</p>

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			<p>Further, there is no assessment of cost implications to the industry. Good regulatory practice requires that in setting industry rules an appropriate balance between costs and benefits is necessary.</p> <p>We do not see the need to mandate technical industry standards. Industry collaboration would be more efficient and effective in achieving desired results.</p>	<p>used to establish and monitor technical network standards.</p>	<p>Authority, in collaboration with operators.</p> <p>Where natural disasters are foreseeable, a responsible regulator should weigh the cost of applying these standards against the human and infrastructural losses that may be suffered in the absence of such standards. Generally, in the face of the deleterious impact that natural disasters can have on a country, the cost of applying these standards may not be unreasonable and would ultimately enhance the resilience of the public telecommunications infrastructure in Trinidad and Tobago.</p> <p>The Authority took a collaborative approach through the TWG to find that balance, so that realistic standards could be proposed.</p>

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					<p>To establish much needed, yet practicable, technical standards to mitigate the effects of natural and man-made disasters on public fixed telecommunications networks, the Authority, through the TWG, solicited industry best practices from the fixed line operators. Such best practices, along with the ITU-T recommendations, were used in formulating these standards, (mandatory and discretionary), as agreed on by representatives of the operators.</p> <p>Operators would not know the minimum requirement of the regulator without the establishment of standards. For example, the mandatory technical standard 37, which relates to back-up power on access network active electronics, is six hours. If such a timeframe is not established by the Authority, operators may over or under provision back-up</p>

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					<p>power, leading to inconsistency in service availability.</p> <p>Also, compliance and enforcement are not possible without the establishment of clearly identified standards by the regulator.</p>
6	Discretionary Standards	CCTL	<p>With respect to “<i>Discretionary Standards</i>”, the notation states,</p> <p><i>“A concessionaire may comply with the standard as specified. There may exist valid reasons in particular circumstances where a standard cannot be implemented; in this regard, if the concessionaire chooses not to comply with the standard, the full implications of the case must be understood and carefully considered by the concessionaire.”</i></p> <p>Given the nature of these standards we believe that these could be better managed within a collaborative framework with operators and the regulator. CCTL is seeking to better understand the merits of establishing such an approach to setting</p>	CCTL is requesting that TATT provides examples of jurisdictions where there is a similar approach of establishing discretionary standards.	<p>For a number of reasons, it may not always be possible to implement the discretionary standards laid out in this document. Examples include the need for permission to be granted from another party to implement a standard or it may be cost prohibitive to implement.</p> <p>During the discussions at the TWG meetings, which involved inputs from representatives of both the Authority and the fixed line operators, the level of importance and practicability for each standard was assessed, to determine which standards should be mandatory or discretionary. Therefore, the</p>

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			discretionary industry technical standards. It would therefore be helpful to identify any other jurisdiction in which such an approach is used.		management, or classification, of these standards was done in collaboration with the industry. Another telecommunications regulatory body within the Caribbean that sets requirements and recommendations (mandatory and discretionary standards) is the OUR, Jamaica. Also, the Trinidad and Tobago Bureau of Standards (TTBS) and the CARICOM Regional Organisation for Standards and Quality (CROSQ), set both mandatory and voluntary standards. Although the discretionary standards established by the Authority are not purely voluntary, they do allow the operators some leeway with regards to implementing these standards.
7	Section 3.1.2 – Technical Standards for Telecommunications Poles	Digicel	We have noted that standards for the use of road reserves for pole planting have not been included.	Whilst Digicel appreciates that the Authority may not have authority over road reserves,	The Authority thanks Digicel for its recommendation and agrees that standards regarding the location at which telecommunications poles are

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				<p>telecommunications poles are a vital part of the telecommunications infrastructure and as such we ask that the Authority work with the relevant authorities in creating standards for the planting of telecommunications poles on road reserves with recommended minimum distances from the edge of the roadway being specified.</p>	<p>planted in relation to road reserves, such as minimum distance from the curb, should be established. The Authority shall facilitate discussions on this matter between the operators and parties who are involved, such as T&TEC, the Regulated Industries Commission (RIC) under whose purview T&TEC falls, and city and municipal corporations.</p> <p>Currently, with regards to both T&TEC and the telecommunications industry within Trinidad and Tobago, there is no standard that specifies the minimum distance at which a light pole or telecommunications pole must be planted away from the road. This is due mainly to the width of pavements varying throughout Trinidad and Tobago, as the boundaries of properties tend to vary. There is also the unfortunate local practice, by both residential and</p>

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					commercial interests, of encroaching on road reserves, thereby making it difficult to construct pole routes and establish such a standard.
8	3.1.2.2 Bush Fires	TSTT	The construction of firebreaks around poles in rural areas will be time-consuming and very costly, as this has to be done a few times each year. There are too many poles to construct firebreaks. Bush fires are not as prevalent on road reserves and therefore do not cause a major problem for utilities through disruption of services.	This should be omitted.	<p>During the peak of the dry season, bush fires frequently occur in road reserves along major roadways such as highways. Such fires result in breaks in access and transport network cables. The damage caused by bushfires to telecommunications poles and cables would be reduced by constructing firebreaks around telecommunications poles that are at risk from bushfires.</p> <p>The operator's equipment would be safeguarded and service availability to the communities would be maintained by adherence to this standard.</p> <p>Discretionary standard 4 was revised as follows in version 1.0 of the document:</p>

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			<p>The major problem that arises from vegetation affecting utilities that result in service disruption in rural areas is fallen trees during strong winds.</p> <p>Thus, trees along pole routes should be trimmed/pruned to avoid fallen tree branches coming into contact with overhead cables during adverse weather conditions.</p>		<p>“Firebreaks should be constructed around the base of telecommunications poles, particularly those deployed in areas that are prone to bush fires.”</p> <p>Areas prone to bush fires include rural areas and the verges of roadways.</p> <p>The Authority thanks TSTT for its comment and asks TSTT to note that the trimming of trees along pole routes to avoid fallen tree branches coming into contact with overhead cables is stated in discretionary standard 1.</p>
9	<p>3.1.2 Technical Standards for Telecommunications Poles</p> <p><i>3.1.2.1 Hurricane or Strong Winds</i></p>	CCTL	<p>We note that the Authority is maintaining that in areas where wind conditions are at the highest, two guyed wires shall be attached to every second intermediate pole.</p>	<p>CCTL recommends that the current practice guying for poles that are set at an angle is considered industry standard.</p>	<p>According to ITU-T recommendation L.89. Design of suspension wires, telecommunication poles and guy-lines for optical access networks (2012), the tying of two guyed wires applies mainly</p>

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	<p><i>Mandatory Standard;</i></p> <p><i>16) In areas where wind conditions are at the highest, two guyed wires shall be attached to every second intermediate pole.</i></p>		<p>Current industry practice is that guying is normally done using two guy wires for poles that are set at an angle, but not for poles in a straight line. This is the case for example where an operator uses poles planted by T & Tec. CCTL believes that where poles are in a straight line, it is not necessary to attach guy wires to every second intermediate pole. This mandatory standard to attach guy wires to every second intermediate pole is not necessary. It would only serve to introduce additional costs to the industry.</p> <p>We maintain that the current practice of guying for poles that are set at an angle should be the accepted standard.</p>		<p>to every second intermediate pole located within areas that experience very high winds. The standards defined in this document were developed through a TWG that included representatives from the fixed line operators and thus reflect best practice within the telecommunications industry.</p> <p>Although fixed telecommunications operators commonly attach aerial cables to T&TEC poles, the standard of tying two guyed wires to T&TEC poles that are set at an angle is within the purview of T&TEC and not of the Authority. Mandatory standard 16 applies to poles installed by fixed line telecommunications operators to support telecommunications outside plant equipment and cables.</p> <p>It should be noted that even though this is a mandatory standard, it applies only to poles</p>

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					located in areas that experience high winds on a regular basis.
10	3.1.4.3 Earthquakes	TSTT	TSTT uses DWV pipes for the majority of its underground systems as these are encased in concrete mix to maintain its shape and rigidity. The use of concrete mix for backfilling of duct tracks is recommended by the Ministry of Works along their roadways to avoid sinks on roadway due to material settlements that occur after installation. Schedule 40 PVC pipes are only used if conduits are buried in sand and where no concrete is used. If there are any earth movements, the ducts encased in concrete will shift at the weakest point which is at the pipe joints and therefore does not affect the integrity of the cables.	Schedule 40 PVC pipes should be used in underground systems where it is buried in a sand mix layer. TSTT proposes that if conduits are encased in concrete, then the less expensive DWV conduits can be utilised.	The Authority agrees with TSTT's recommendation that drain, waste, vent (DWV) PVC be used for conduits encased in reinforced concrete. Mandatory standard 23 was amended in version 1.0 of the document as follows: "Underground ducts made of either schedule 40 PVC, at a minimum, or high-density polyethylene (HDPE) shall be used. For underground ducts encased in reinforced concrete, drain, waste, vent (DWV) PVC can be used."
11	3.1.2.4 Landslides <i>Discretionary Standard:</i> (5) <i>Telecommunications</i>	CCTL	We note the slight amendment in the description of the standard from " <i>areas which are prone to landslides</i> " to " <i>areas which are known to be prone to landslides</i> ", If an area is known to be prone to landslides it would not be in an	CCTL is requesting that TATT clarifies its philosophy for establishing discretionary technical network standards.	The Authority's philosophy in establishing discretionary technical standards is that they give the operators leeway with regards to implementing these standards. The implementation of a discretionary standard will depend on practicality, need,

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	<i>poles should not be installed in areas</i>		operator's interest to plant poles in the area if this can be avoided. While we have no issue with what is stated, what is unclear is TATT's underlying philosophy for establishing these discretionary standards.		<p>cost and other factors. Discretionary standards are laid out for all operators as reference points and targets for implementation, once it is possible to do so.</p> <p>In some parts of Trinidad and Tobago, landslides occur regularly during the rainy season. Remote villages may become isolated as a result of a landslide and, depending on the severity of it, telecommunications poles en route to these villages may be knocked down, leaving villagers without telecommunications services. By burying cables underground instead of running them aerially along poles, the probability of such villages losing coverage and service will be reduced.</p> <p>The Authority recognises that the cost of running underground ducts may be high for operators and, thus, this standard was made discretionary.</p>

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12	<p><i>Discretionary Standard:</i></p> <p><i>(6) If practicable, telecommunications cables should be run underground in ducts buried beneath roadways in areas which are known to be prone to landslides.</i></p>	CCTL	Here again, while we have no issue with what is stated, what is unclear is TATT's underlying philosophy for establishing such standards. We would note that placing cables underground can be cost prohibitive in some circumstances. To make a business case for a network investment, such evaluations are a standard part of the decision-making process.	CCTL is requesting that TATT clarifies its philosophy for establishing discretionary technical network standards.	<p>The Authority's philosophy in establishing discretionary technical standards is that they give the operators leeway with regards to implementing these standards. The implementation of a discretionary standard will depend on practicality, need, cost and other factors. Discretionary standards are laid out for all operators as reference points and targets for implementation, once it is possible to do so.</p> <p>The Authority recognises that the cost of running underground ducts may be high for operators and, thus, this standard was made discretionary.</p>
13	<p>3.1.4 Technical Standards for Underground Ducts & Cables</p> <p><i>3.1.4.1 Landslides</i></p>	CCTL	Here again, while we have no issue with what is stated, what is unclear is TATT's underlying philosophy for establishing such standards. We would note that placing cables underground can be cost prohibitive in some circumstances. To make a	CCTL is requesting that TATT clarifies its philosophy for establishing discretionary technical network standards.	The Authority's philosophy in establishing discretionary technical standards is they give the operators leeway with regards to implementing these standards. The implementation of a discretionary standard will

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	<p><i>Discretionary</i></p> <p><i>Standard:</i></p> <p><i>(8) Underground ducts and cables should be buried under roadways in areas which are known to be prone to landslides.</i></p>		business case for a network investment, such evaluations are a standard part of the decision-making process.		<p>depend on practicality, need, cost and other factors. Discretionary standards are laid out for all operators as reference points and targets for implementation, once it is possible to do so.</p> <p>The Authority recognises that the cost of running underground ducts may be high for operators and, thus, this standard was made discretionary.</p>
14	3.1.5.1 Floods	TSTT	Passive cross-connect cabinets are mounted on single concrete poles by TSTT. When fully equipped, these cabinets are less than 200 pounds in weight. The concrete mono-pole can sufficiently support this weight and hence there is no need for an H frame.	TSTT proposes that this is amended to state that passive cross-connect cabinets may be installed on single concrete poles if cabinets are 200 pounds or less. For cabinets that weigh in excess of 200 pounds, H frames shall be used. Passive cross-connect cabinets shall be	<p>The Authority agrees with TSTT's recommendation that for passive cross-connect cabinets weighing 200 pounds or less, such cabinets may be installed on single concrete poles.</p> <p>Mandatory standard 26 was amended in the final version of the document as follows: "In areas that are prone to flooding, passive cross-connect cabinets</p>

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				installed on H frames or single pole (pole-mounted) at a sufficient height above floodwater levels.	shall be installed on H frames at a sufficient height above known floodwater levels. Concrete pads may be utilised as an alternative, once the topography of the area allows for the same height advantage as an H frame. For passive cross-connect cabinets weighing 200 pounds or less, such cabinets can be installed on single concrete poles”.
15	Section 4 – Technical Standards to Enhance the Resilience of the Access Network (Active Electronic Devices)	Digicel	With respect to the mandatory standard #37 relating to back-up battery life at full load, we note that this standard appears to have been arbitrarily defined at a minimum of six (6) hours.	Digicel recommends that mandatory standard #37 relating to back-up battery life at full load specify the minimum run time as the time taken for a backup generator to be deployed to site, if no such generator is present on site. We believe that six hours may be too long or too short in some instances. If a generator is present on site, battery run time	Mandatory standard 37 applies to outdoor cabinets which have only back-up battery or fuel-cell technology on site and no generator. Basing the battery run time on the time a standby generator takes to be deployed to the site is impractical, as the conditions en route, and thus the time taken to reach a site, are unpredictable during and after a natural disaster. The battery run times that were initially suggested by the TWG were either less or greater than six hours. However, because

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				requirement could be reduced.	<p>this is a mandatory standard, a variable battery run time could not be adopted and, thus, an average battery runtime of 6 hours was determined.</p> <p>Additionally, mandatory standard 37 was revised in version 1.0 of the document to indicate that this standard applies to sites without generators, as follows: “For outdoor cabinets which do not have a standby generator, back-up power batteries or fuel cell technology shall have the capability of supporting full equipment load for a minimum period of six hours”.</p>
16	Section 5.1 – Technical Standards to Implement Redundancy	Digicel	We note that mandatory standard #40 relating to microwave redundancy suggests that a microwave system that acts as a redundant path for an OTN should provide full restoration of traffic	Digicel believes that this standard is not always practical or economically feasible for the operator as fibre networks have significantly more capacity than microwave links and only certain types of traffic (e.g. voice	The Authority agrees that microwave systems do not have the same traffic-carrying capacity as fibre optic systems and, as such, it may not be practicable for microwave systems to act as the full back-up system for a fibre optic link. In such situations, the Authority recommends that fibre transmission links be utilised as

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				instead of streaming video traffic) may be allowed on the microwave link to avoid congesting it.	redundancy for fibre transmission links. Section 5.1 in version 1.0 of the document was revised to reflect the Authority's response above.
17	Section 6.1 – Technical Standards to Implement Redundancy	Digicel	We note that the mandatory standard #48 is potentially ambiguous. Two POIs may be logical connections to two switches at different geographic locations but the physical connections are at the one geographic location.	Digicel recommends that this standard be amended to state that the two separate POIs must be at geographically distinct locations.	The Authority agrees that the two separate POIs should be at distinct geographical locations. Mandatory standard 48 was amended in version 1.0 of the document to reflect this, as follows: “Public fixed telecommunications operators from whom interconnection services are requested shall have two separate POIs at distinct geographical locations”.
18	6.1 Technical Standards to Implement Redundancy	TSTT	TSTT reiterates that this “standard” exceeds the regulatory authority of TATT by seeking to mandate a topology and design on operators outside of the prescriptions of the existing Regulations.		The Authority is empowered under section 45 of the Act to identify, adopt or establish preferred technical standards. In keeping with its powers, the Authority established <i>Standards and Guidelines for the Development of Reference</i>

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			<p>In this regard, this standard cannot be implemented without first making amendments to, at least, the Telecommunications (Interconnection) Regulations 2006. These amendments would, among other things, bring into legal effect the contents of its Standards and Guidelines for Interconnection wherein this obligation is enshrined. It should be included in the Regulations as an Appendix or Schedule.</p> <p>This standard, if insisted upon should be discretionary until the Regulations are amended.</p>	<p>This standard should be omitted.</p> <p>Otherwise, this standard should be made discretionary until the Regulatory framework is amended to bring this proposal in line with the statutory regulatory environment.</p>	<p><i>Interconnection Offers</i> (version 1.0).</p> <p>The Authority emphasises that a key design philosophy which underpins the standard of service of telecommunications networks is the use of redundancy in topology design, to minimise the impact of any single point of failure on the overall service.</p> <p>Regulation 19 of the Telecommunications (Interconnections) Regulations requires concessionaires to prepare, publish and maintain a reference interconnection offer (RIO) substantially in the form published by the Authority.</p> <p>The document <i>Standards and Guidelines for the Development of Reference Interconnection Offers</i> (version 1.0) states that, “the interconnection provider shall establish and identify at least two (2) PoIs which will be</p>

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					used for interconnection purposes.”
19	iv. Concluding Comments	CCTL	We reiterate our position that a more effective approach to setting and monitoring technical industry standards is through industry collaboration. CCTL looks forward to working with the industry on this issue.		<p>These technical standards were developed through a TWG that comprised representatives from both the Authority and the local fixed line operators. The terms of reference of this TWG were to discuss and establish technical standards to mitigate the effects of natural and man-made disasters on public fixed telecommunications networks. Through inputs from both the Authority and the operators in carrying out the work of the TWG, these technical standards reflect internationally recognised standards as well as best practices relative to the telecommunications industry within Trinidad and Tobago.</p> <p>The Authority will continue its collaborative approach with operators in the monitoring of compliance with the established standards.</p>

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					Operators' compliance with these technical standards will be monitored through audits conducted by the Authority.