

EETT

National Telecommunications

Contingency Plan

Consultation Document

Table of Contents

1	Preface	1
2	Introduction	2
3	Scope of Consultation	4
3.1	Critical Factors Selection	6
3.1.1	Determining scenarios and emergency conditions	6
3.1.2	Selection of critical sectors and organizations	7
3.1.3	Selection of critical telecommunication services	8
3.1.4	Critical infrastructure	8
3.2	Triggers for initiating the implementation of the contingency action plans	9
3.2.1	Triggers invoking the implementation of action plans	9
3.2.2	Planned Maintenance Outages	12
3.2.3	Trigger Reporting	12
3.3	Implementation of contingency action plans	13
3.3.1	Decision makers and roles	13
3.3.2	Decision making method for the Crisis Management Team invocation	13
3.3.3	Carriers actions timetable for the resolution of emergencies	14
3.3.4	Ways and Methods of activating the Contingency Action Plans implementation	15
3.4	Crisis Management and action plan	17
3.4.1	Crisis management definition	17
3.4.2	Closure of action plans implementation and return to normal operation	22
3.4.3	Event, service, sector and trigger association.	22
3.4.4	Triggers and action plans	25
3.5	Reporting	47
3.5.1	Submission of biannual reports	47
3.5.2	Problem Management Report Development	48
3.6	Management Crisis Tools	49
3.6.1	Crisis Management Command Center	49
3.6.2	Disaster Recovery Environment	51
3.7	Further Remarks and Comments	51

Annex A: Contingency Action Plans

1 Preface

The present consultation document has been prepared by the National Greek Telecommunications Authority (EETT) and it concerns the: “National Telecommunications Contingency Plan” (NTC Plan).

EETT invites all the interested parties to present their comments and their opinions concerning the proposed NTC Plan. Should there be any aspects or opinions not included in the present consultation document regarding the NTC Action Plan, it is strongly recommended that you will include them in your answers.

The answers must be signed and submitted in either Greek or English, in printed form and electronically **not later than 29/07/2005, 13:00pm**. Non signed answers will not be taken into consideration. All interested parties have the right to require concealing of their identity.

It is noted that for the clear understanding of the recommendations that are presented in the Consultation Document, a thorough study of the Annex is required that includes those recommendations in a detailed manner.

This project aims to the proper, consistent and continual support of the consumers and the society in general, regarding the telecommunication service delivery in times of emergency situations. The success of the contingency plan implementation depends on the involvement, the cooperation and the participation of the carriers, that, by invoking their business continuity plans on a first place, they confront the emerging contingency situations.

All answers must bear the title:

Consultation Document regarding the “National Telecommunications Contingency Plan”

Your answers must be submitted to the following address:

EETT
60, Kifisias Avenue
15125 Marousi
Attica
E-Mail Address : emergency_plans@eett.gr

During the Public Consultation, EETT will be available for any further clarifications on questions made by the interested parties. All questions must be signed and submitted via the e-mail address : emergency_plans@eett.gr.

The present document does not impose any obligation to EETT concerning the content of the regulation that will follow.

2 Introduction

EETT, according to the Law 2867/2000, have the responsibility to monitor and secure the protection of the users' rights, which include the non-disrupted and the high level quality usage of the available telecommunication services. In this context EETT implement the "NTC Plan" project that aims to develop the appropriate emergency action plans regarding the telecommunication networks (as analyzed but not exhausted in ITU documents). For the purpose of this document, critical condition events are defined as the states in which the telecommunication network could be driven, due to external or internal factors (e.g. natural or industrial disaster, etc.), and during which the network cannot satisfy the users communication needs (by presenting reduced throughput capability and been unable to perform and produce the quality of service expected by the users).

Emergency situations include but are not limited to the following (ITU-T Recommendation E.413):

- The increase of telecommunication traffic that might be observed only to specific geographic locations, due to anticipated peak seasons or emergency situations.
- The transmission system outages (including the passive elements, such as the cables).
- The national digital centers outages.
- The international traffic digital centers outages.
- The signaling system outages.
- The telecommunication traffic congestion to the interconnected networks (national or international).

Due to an emergency situation, the telecommunications network may be driven to a congestion (extremely increased traffic in comparison with the initial design parameters) or to the loss of part of its capacity resulting to inability to satisfy the subscribers' demands.

The project's objective is to determine the appropriate national action plans in order to respond to the emergency situations described above. More specifically, the project's objective is analyzed as follows:

- To define «emergency situations» in the context of the project, due to both internal and external factors, and categorize them.
- To define the "critical" services, the provision of which is deemed as necessary in all emergency situations.
- To define the appropriate triggers and the way of their measurement, in order to practically assess when the predetermined procedures are activated.
- To define the general measures that the telecommunication carriers must implement separately or collectively, in order to guarantee as much as possible the satisfaction of the society's telecommunication needs in times of emergency (e.g. informing the public about upcoming events).
- To develop action plans for each outage/ fault that might occur due to an emergency.

- To determine the profile and the roles of the people participating in the Crisis Management Team that will manage the problems arising during a contingency.
- To develop a National Action Plan in order to be prepared to manage emergency events that affect the telecommunications networks.

For the elaboration of the NTC Action Plan a specific methodology has been followed, presented later in this document, and an analysis has been conducted regarding the roles and responsibilities of EETT, the telecommunication carriers and any other organization that will support the project.

The active participation of the telecommunication carriers is considered as critical for the success of the project, since these will be the organizations that will be asked to participate in the implementation of the action plans by undertaking the proposed necessary measures.

3 Scope of Consultation

The object of this consultation is the proposed action plan and the way of its realistic implementation. The relevant complete document is presented in Annex A. The following Sections, present in a brief manner all issues to which the telecommunications carriers are requested to express their opinions, together with specific questions that the carriers must answer. Before each question there is a brief presentation of the proposed approach, together with the relevant references (underlined) to the relevant section of the Annex A document, so that the interested parties may obtain more information regarding each issue that is presented in this document.

A foundation has been established for the development of the action plan based on the assumption that during an emergency the telecommunication services will be provided as long as the ***Three Primary Beliefs*** remain uninterrupted, which are the following: the current ***way of life, stability*** of society and sustained ***well being of the population*** (Section 0 Annex A).

In this framework, the action plan has the following scope:

- To define any telecommunications outages / faults and the possible changes to the current operating model, threatening the Three Primary Beliefs.
- To primarily focus on the telecommunication ‘users/consumers’ – either directly when they are unable to use personal communications or indirectly through their need to contact Critical Sectors and Organizations such as the emergency services (e.g. police, fire department, ambulances) whose services have been impacted.
- To address any likely disaster scenario and subsequent impact upon the telecommunications infrastructure and services offered to the ‘users/consumers’.

The terms and definitions specific in this action plan are presented below (Table 1).

Table 1: Action Plan’s Term Definition

Term Definition	Explanation
NTCP (National Telecommunications Contingency Program)	National Telecommunications Contingency Program: the initiative by EETT to establish a robust and highly integrated approach to crisis management planning and thinking within the Greek Telecom Sector.
NTC	National Telecommunications Contingency
NTC Action Plan	The detailed actions to counteract against telecommunications services outages and impact as a result of crisis or catastrophic event
Internal Disaster Recovery Plan	A self contained set of activities that are activated in case of emergency. Within the scope of the NTCP, Disaster Recovery Plans refers to Carriers’ internal plans or relevant actions.
Critical Telecommunications Services	The ‘Telecom Services’ offered by the Carriers – dialled services, mobile telephony, etc., prioritised and required to be available at a time of crisis. It is a prioritized list of a subset of the Telecommunications Carriers’ full service offering which is deemed “mission Critical” in support of the Critical Organizations and Sectors. (<u>Section 2.4 Annex A</u>).

Term Definition	Explanation
Critical Organizations & Sectors	Critical Sectors and Organizations in the economy and the society in general – health services, fire prevention, ambulance service etc. – and for which the Critical Telecommunications Services will be prioritized and made available. (Section 2.3 Annex A).
Critical Telecommunications Infrastructure	The Carriers' infrastructure which forms the foundation and supports proper operation of the Critical Telecommunications Services (Section 2.5 Annex A).
Crisis Scenarios	A 'typical' major incident that would precipitate an Emergency Condition and which would result in excessive telecommunications services demand or outages. It includes a list of proposed scenarios for which the NTC Action Plan is designed to assist. In developing the list we took also into account the feedback from the Carriers (given by answering a questionnaire issued on January 2005) in order to identify the best method for implementing a suitable contingency environment and which will support the further consultation, implementation and deployment recommendations (Section 2.2 Annex A).
Triggers	A list and description of metrics, and performance levels associated with the Crisis Scenarios, Critical Organization telecommunications needs, and Critical Telecommunications Services which once breached Invocation of the associated NTC Action Plan is initiated (Section 3 Annex A).
CMT	The process by which a unified Crisis Management Team consisting of Carrier and EETT representatives comes together to address the crisis and manage the NTC Action Plan (Section 4 Annex A).
Crisis Management	The steps and the procedures required to address the particular crisis. This is the heart of the NTC Action Plan (Section 5 Annex A).
Reporting	A set of crisis event reports designed to reduce the likelihood of a crisis and inform all stakeholders when one does occur (Section 6 Annex A). Reports are categorized as follows: <ul style="list-style-type: none"> • Biannual Service Management Reports. They are reports submitted periodically in order to provide the ability of trend analysis and the prevention of possible emergency situations. • Problem Management Reports. They are reports that are issued after a contingency in order to promote the experience accumulation and any good practices for confronting emergencies.
Tools	A set of recommendations (Section 7 Annex A) designed to: <ul style="list-style-type: none"> a) Assist the Crisis Management Team to perform its duties. b) Assist the Crisis Management Team in communicating with the Media and the General Public. c) Introduce a set of processes, procedures and technical recommendations which can be used to reduce the likelihood of a crisis event or expedite resolution.

The NTC Action Plan is based on the process flow presented on the figure below (Figure 1) ([Section 1.3 Annex A](#)).

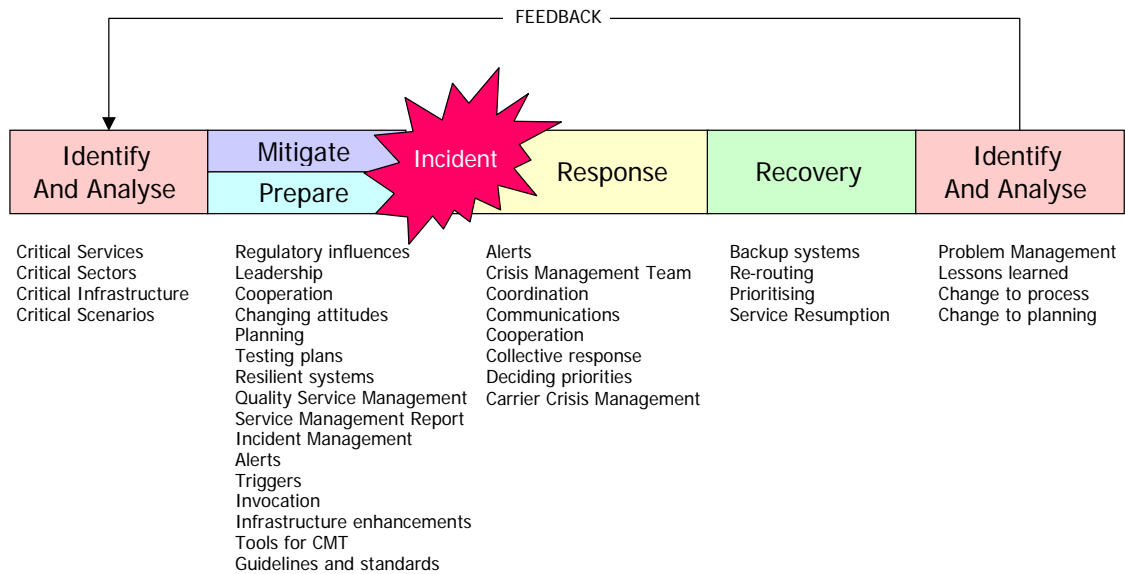


Figure 1: NTC Action Plan Process Flow

The next step is, considering an event as the beginning of the process, to develop the appropriate action plan according to the method presented in the figure below (Figure 2).

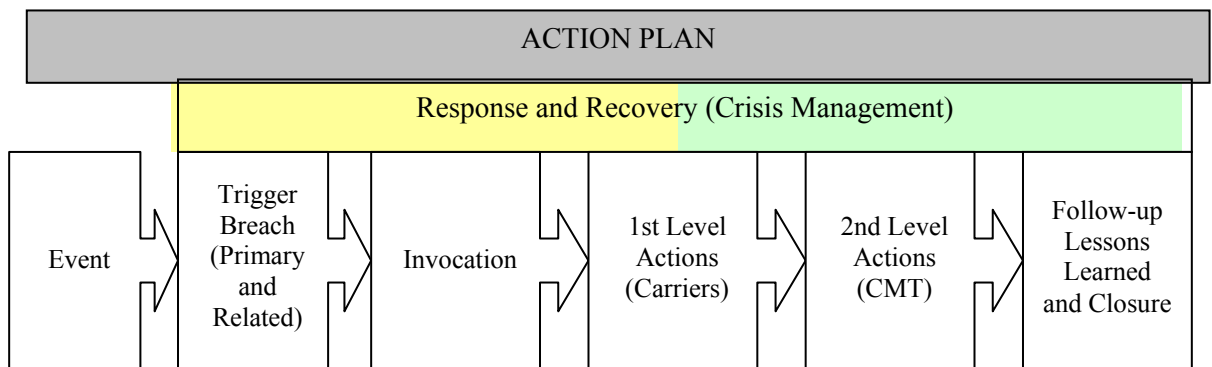


Figure 2: NTC Action Plan Process Flow.

3.1 Critical Factors Selection

For the development and implementation of the emergency response plans, an initial choice has been conducted of the factors that are considered as critical and must be taken into consideration in every case. These factors include the emergency situation *scenarios*, the *sectors* that are deemed as critical and therefore should be supported by the telecommunication networks in times of emergency, the *services* that are deemed as critical and therefore should be provided in times of emergency, as well as the critical telecommunication providers' *infrastructure* that in case of an outage or a malfunction it may lead in a disruption to providing the critical telecommunication services (Section 2 Annex A).

3.1.1 Determining scenarios and emergency conditions

In the context of defining the emergency scenarios and events that may lead in a critical condition or in a disruption of the telecommunication services, 14 such scenarios have been

short listed out of 40 categories of scenarios ([Section 2.2 Annex A](#)). The selection of those 14 scenarios was based on the risk analysis and the possible impact to the **Three Primary Beliefs**. The selected scenarios have been divided in two categories and are presented in the following table (Table 2).

Table 2: Selected scenarios that may lead to critical situations.

External Crisis and Emergency Event Scenarios	
1	Chemical/Nuclear Incident (inside or outside Greece) – non fission explosion
2	Nuclear Incident (inside or outside Greece) – fission explosion
3	Earthquake
4	Inland Flooding
5	Coastal Flooding and Tsunami
6	Forest Fire and Scrub Fires
7	Acts Targeting Industrial and Commercial Centers
8	Virus and Malicious attacks on the Carriers
9	Sudden Income Changes (for a Telecommunications company)
Telecommunications Infrastructure Impact Scenarios	
1	Infrastructure Component Failure
2	General Infrastructure Fires (e.g. fire in a major Telecom Carrier infrastructure)
3	Acts Targeting Physical Telecommunications Infrastructure
4	Acts Targeting Telecommunications Control and Command (NMS, TMN)
5	Capacity Management Failure
Question 1: If you disagree with the selected scenarios please justify your opinion and make alternative suggestions.	

3.1.2 Selection of critical sectors and organizations

This part outlines the Critical Sectors and Organizations Sectors for which Critical Telecom Services need to be provided, as part of a National Telecommunications Contingency process. In this context, 4 sectors and organizations have been short listed out of 18 sectors ([Section 2.3 Annex A](#)). The selection of those 4 sectors was based on the risk analysis and the possible impact on the **Three Primary Beliefs**. The selected sectors are presented in the following table (Table 3).

Table 3: Selected critical sectors and organizations.

Critical Sectors and Organizations	
1	Health: Primary-, secondary- and tertiary-care medical service, ambulatory services hospitals, etc., including special units such as burns, disease, etc.
2	Emergency Police, Fire, Ambulance and Rescue Services: National and regional related

Critical Sectors and Organizations

organizations.

- 3 Shipping and Harbour Control: The monitoring of shipping flow, the access into harbours, and the security and details associated with custom controls.
- 4 Civil Defence: The security, military, Government organizations requiring coordination of national, municipal, or regional recovery and control.

Question 2: If you disagree with the selected sectors and organizations please justify your opinion and make alternative suggestions.

3.1.3 Selection of critical telecommunication services

In the context of defining those telecommunication services that must be provided during times of emergency, 12 such services have been short listed out of a total of 32 services ([Section 2.3 Annex A](#)). The selection of those 12 services was based on the risk analysis and the possible impact to the *Three Primary Beliefs*. These selected services are presented in the following table (Table 4).

Table 4: Selected critical telecommunication services.

Critical Telecommunication Services

- 1 Fixed Line Dialed (National and Local)
- 2 International Direct Dialling
- 3 Mobile Telephony (including SMS)
- 4 Satellite Telephony and Data (including Maritime emergency)
- 5 Internet Services Provision
- 6 Wireless Leased Lines
- 7 MAN/WAN Link Services
- 8 Data Services
- 9 Carrier Network Interconnects
- 10 Fixed Leases Lines
- 11 Disaster Recovery and Data Centre Sites
- 12 Emergency and Priority Services (E112, 100, 199, 166, etc.)

Question 3: If you disagree with the selected services please justify your opinion and make alternative suggestions.

3.1.4 Critical infrastructure

In the context of defining the critical telecommunication infrastructure, 16 infrastructure categories have been short listed ([Section 2.5 Annex A](#)). The selection of those 16 categories was based on the risk analysis and the possible impact to the *Three Primary Beliefs*. These selected categories are presented in the following table (Table 5).

Table 5: Selected critical telecommunication infrastructure.

Critical Telecommunications Infrastructure	
1	Service Provider technical building facilities.
2	Network backbone nodes, digital switching systems.
3	Fixed Telephony Switching Systems.
4	Terrestrial Fibre Cable Systems.
5	Terrestrial Coaxial/Copper Cable Systems.
6	Submarine Cable Systems.
7	Submarine Cable Termination Stations.
8	Microwave Links, Towers and Masts.
9	Local Distribution that covers a large number of subscribers.
10	Mobile Switching Systems.
11	Mobile Telephony Transmission- Major Base Station Nodes.
12	Network Management Centres.
13	Data Centres.
14	Specialized Wireless Networks.
15	Space Satellite.
16	Satellite Earth Stations.
Question 4: If you disagree with the selected categories please justify your opinion and make alternative suggestions.	

3.2 Triggers for initiating the implementation of the contingency action plans

Invoking the implementation of action plans requires the use of specific triggers. In the cases where those triggers will be breached, then the implementation of the above plans must be activated ([Section 3 Annex A](#)).

3.2.1 Triggers invoking the implementation of action plans

For invoking the implementation of action plans the following 4 trigger categories have been identified:

- 1 Triggers associated with ***Crisis and Emergency events external to the telecommunications environment*** (i.e. Earthquake) which could cause excessive use of telecommunications service. It is noted that an event could cause the activation of a secondary related trigger.
- 2 Triggers within the ***telecommunications infrastructure*** which subsequently impact the defined Critical Telecommunications Services and thus the end-user/consumer.

- 3 Triggers which are associated with specific defined ***Critical Telecommunications Services*** as perceived by the end-user/consumer.
- 4 Triggers related to the quality of service that is provided to ***Critical Sectors and Organisations*** and which will impact the ability of the end-user/consumer to communicate with vital organizations such as ambulance, fire brigade, police etc.

According to those categories a group of 26 triggers has been identified that is presented on the following table (Table 6). The invocation of the action plans occurs when a trigger has been breached or when certain events take place. The trigger points or those specific events were calculated or defined on the basis of the international practice and the Greece's needs.

Table 6: Selected triggers.

Triggers	
1	<ol style="list-style-type: none"> a The loss of infrastructure service capability equivalent to 300,000 user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute. b Over 10,000 originating and terminating calls are blocked for inter-carrier communications in any 30 minute interval. c On two or more consecutive days, there are two or more instances where 10,000 user connections are interrupted for less than 30 minutes.
2	A fission (nuclear) explosion, reported by the Government or media within the borders of Greece or within 1000 km of Greece.
3	An earthquake of 6 on the Richter scale, reported by the Government or media within the borders of Greece or within 100 km of Greek territory, or above 5 Richter in any urban areas.
4	Flooding affecting any town over 5,000 people, reported by the Government or media.
5	A forest or scrubland fire reported as threatening population centers, reported by the Government or media.
6	Any fire in any switching station, cable termination centre, transmission centre, or other Carrier establishment where hardware needed to support telecommunication services is damaged. Will cause a secondary trigger if it impacts telecommunications services.
7	An actual terrorist act or perceived terrorist threat against telecommunications infrastructure, reported by the Government or media.
8	An actual terrorist act resulting in the loss of life or the closure of multiple businesses reported by the Government or media.
9	Any unauthorized internal or external malicious attack on the Carriers affecting the ability to deliver service or to secure personal data records of consumers and businesses.
10	Capacity on any element of the telecommunications infrastructure where traffic exceeds 90% of total possible traffic, in any single exchange, switching centre, transmission and connection centre, communications paths (e.g. cabling).

Triggers	
11	Any Carrier share-price drop of 30% in a week, or any operational financial loss, or any financial irregularities identified by auditors or other agents.
12	Annual investment report and update via the Service Management report (where EETT believes the investment profile may not be commensurate with the Three Primary Beliefs).
13	Any medical-related announcement regarding mobile Carrier activity that is followed, within a week, by a 25% drop in call traffic volumes to and from mobile telephone users.
14	Annual traffic report showing peak flows and problems.
15	Any registered hospital telecommunications outage for more than 60 minutes.
16	Any registered Fire, Ambulance and Rescue fixed or mobile telecommunications outage for more than 30 minutes.
17	Any registered shipping and harbor control telecommunications outage for more than 60 minutes.
18	<ul style="list-style-type: none"> a Failure of international service resulting in 5,000+ failed international calls within a 30-minute interval (could be caused by routing difficulties, transmission, etc.) b Over 15,000 originating and terminating international calls are blocked for Inter-carrier communications in any 30 minute interval. c The loss of infrastructure service capability equivalent to 150,000 international user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute.
19	<ul style="list-style-type: none"> a The loss of 5,000 potential mobile telecom users brought about by a single incident, root-cause, or within a 30-minutes interval. To estimate the potential users the affected system capacity should be multiplied by a contention factor of 10. Thus an MSC which is capable of handling 500 simultaneous calls would potentially impact $500 \times 10 = 5,000$ users. b The loss of mobile infrastructure service capability equivalent to 150,000 user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute. The number of users is calculated as in the previous trigger point. c The concurrent total or partial loss of service for 4+ 'cells' (based around a mast) for a total of 30 minutes (i.e. 4 cells inactive due to the same root-cause during a 30 minute interval) brought about by a single incident or root-cause d Over 15,000 originating and terminating calls of mobile telephony are blocked for inter-carrier communications in any 30 minute interval.
20	Loss of Internet telecommunications connectivity to an ISP impacting more than 10,000 users for more than 30 minutes.
21	The loss of or disruption to any service group affecting more than 30% of the subscribers using those services within any single switching exchange / transmission center.
22	A 90% utilization for any Carrier-Carrier interconnects lasting for a continuous period of 30 minutes or more.

Triggers	
23	Loss of a Carrier Data/Network Management Centre, or a Critical Sector Data Centre managed by the Carrier.
24	<p>a 100 failed attempts to access Emergency or Priority numbers (100, 166, 199, 112, etc.) in a duration, which needs to be agreed with the Emergency Service operator.</p> <p>b No ability to originate, terminate, or complete calls related to Emergency or Priority numbers for more than 30 minutes.</p>
25	Service interruption or serious downgrading of service for more than 30 minutes offered by Hellas-Sat.
26	<p>a Deadly disease epidemic or pandemic that causes death in 50% of cases, or is likely to cause more than 50,000 deaths in Greece, that is either already within Greece or that will soon reach Greece.</p> <p>b At least 200 user complaints to the offices of EETT within one working day, relating to any single telecommunications service or with reference to any single root cause.</p> <p>c Carrier unable to collect and process a relevant trigger metric for a period of over 1 hour.</p>
Question 5: If you disagree with the selected triggers please justify your opinion and make alternative suggestions.	

3.2.2 Planned Maintenance Outages

During planned maintenance periods, when there are scheduled outages, it is recommended that a number of actions should be adhered to by the Carriers, in order to prevent the invocation of some of the chosen triggers that are presented above.

3.2.3 Trigger Reporting

The trigger reporting and the reporting of a possible trigger breach constitute a very important element for the reassessment of the risk levels related to the various scenarios, services and infrastructures. For this reason the telecommunication carriers should submit to EETT biannual Service Management Reports that must include at least the following (Section 3.2.5 Annex A):

- The cases where there was a risk for a trigger breach, either based on documented evidence or based on modeling calculation that the telecommunication carriers are employing.
- The description of the relevant risk, opportunities and possibilities for the re-appearance of the events that cause a hazard, as well as the possible ways of preventing or responding to that risk.

Question 6: If you disagree with the content of those reports please justify your opinion and make alternative suggestions (please combine your answer with your answer to Question 22, Section 3.5.1. of the current document).

3.3 Implementation of contingency action plans

The implementation of the contingency action plans requires the existence of the appropriate structure and organization, as well as the existence of the relevant supporting infrastructure. (Section 4 Annex A).

3.3.1 Decision makers and roles

The organization structure for the implementation of the contingency action plans requires the creation of a centralized Crisis Management Team (CMT). This team includes individuals with specific leadership roles that are described in the table below (Table 7).

Table 7: CMT Leadership Roles.

Role	Description
NTC Leadership team	Three senior EETT staff with a specific responsibility for managing and coordinating the NTC Crisis Management Team. These people are the key decision-makers.
NTC Information Desk	Organisation/operation that provides a single number and 24x7 service capability, for recording crisis reports and contacting the required call-tree representatives in the event of a Crisis (which will initially include the NTC Leadership team).
NTC Administrator	Updates the call-trees and contact details, ensures that the Internet/extranet apparatus and data are active and up to date. This role could become the CMT scribe. Could come from EETT or a Carrier.
Carrier NTC Officer	Will report progress and communicate with the NTC Leadership team. Integral part of the CMT.

Question 7: If you disagree with the proposed roles please justify your opinion and make alternative suggestions.

3.3.2 Decision making method for the Crisis Management Team invocation

Within EETT a leadership team of 3 senior officers will be appointed (Section 4.4.1 Annex A). The team will be alerted by using different approaches, via the NTC Information Desk, the relevant Carrier, EETT, Government or the end-users, depending on the trigger breached.

In this case, the ability for communication among the telecommunication carriers, EETT and all involved parties (team members, carrier representatives etc.) is considered as a basic element for the emergency's resolution. The proposed method for communication is the following:

- If a trigger breach occurs or a specific event takes place that causes the invocation of implementing the action plans, EETT must be notified immediately. For the effective communication, a specified prioritized call number will be used regardless of the type of network. Therefore it must be ensured that the communication will occur via the fixed or mobile telephony (regardless the carrier or the network). It is recommended to communicate primary via mobile telephony and alternatively by fixed telephony.

- When a the Crisis Management Team is invoked and mobile and fixed telephony are not available (due to an event), a number of TETRA units must be provided to the Crisis Management Center to be available to the Crisis Management Team.
- EETT officers should use at least two means of communication so as to make sure that all CMT members have been contacted.

EETT officers will communicate with those individuals that will be included in a predetermined catalogue. In order for the NTC Leadership Team to make a final decision concerning the invocation of the CMT, the following issues must be examined:

- What is the trigger point that has been breached?
- Are there any special circumstances that will readily resolve the incident?
- How many users affected, what's the impact, and for how long?
- How many Critical Sectors and Organizations affected, what's the impact, and for how long?
- What values will an invocation add, and how can invocation assist in the resolution?

Question 8: If you disagree with the proposed communication method between EETT and the carriers please justify your opinion and make alternative suggestions.

3.3.3 Carriers actions timetable for the resolution of emergencies

In the context of conducting an effort for the resolution of an emergency, the telecommunication carriers are requested to implement specific actions and inform EETT, taking into consideration a specific time schedule that is presented in the following table (**Table 8**) ([Section 4.6 Annex A](#)).

Table 8: Carriers actions timetable for the resolution of emergencies.

Action/Activity	Timetable
Identifying the crisis affect upon any trigger (i.e. being able to determine whether a trigger has been breached).	Within 30 minutes of critical event.
<i>Once the affect of the critical event has been registered and modelled by the Carrier (i.e. within 30 minutes of a critical event), this will be known at the point at which the <u>trigger has been breached</u>. For the following steps activated, these have all been measured against the point at which the Carrier realises the trigger has been breached, or within 30 minutes – whatever is less)</i>	
Reporting the trigger breach by contacting EETT NTC Information Desk on +30 210 xxx xx xx	Within 15 minutes of breaching the trigger.

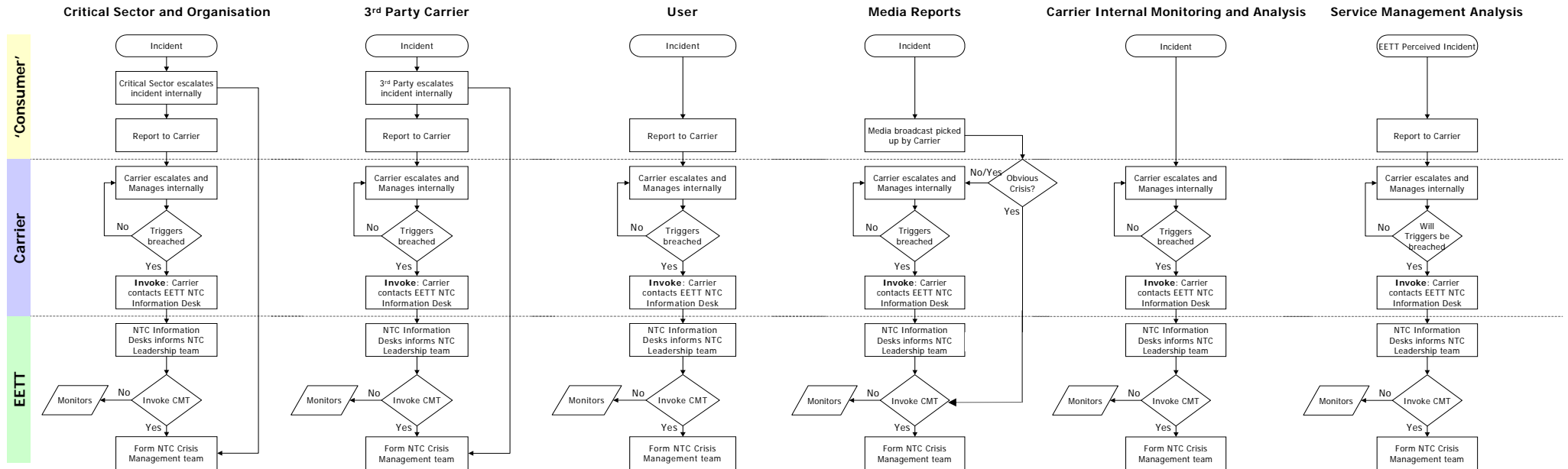
Action/Activity	Timetable
<p>Understanding and communicating the impact to the Leadership Team of EETT, by quantifying and qualifying all the following:</p> <ul style="list-style-type: none"> • The population area affected. • The number of users affected. • The type of the affect (services and infrastructure affected, etc.). • The affects on the Critical Landscape. • The likely and expected duration of the outage. • Whether the impact will increase, and if so, how. 	<p>Within 60 minutes of breaching the trigger.</p>
<p>Diagnosing and communicating the crisis (i.e. the cause) to EETT by qualifying all the following:</p> <ul style="list-style-type: none"> • The current knowledge and understanding of the exact nature of the crisis. • The root-cause of the incident. 	<p>Within 60 minutes of breaching the trigger.</p>
<p>Understanding and communicating the recovery options to EETT, based around the immediate options (including viability of option, cost, recovery suitability) by qualifying all the following:</p> <ul style="list-style-type: none"> • Utilising the infrastructure of other Carriers. • Utilising spare systems. • Call control, routing and prioritization. • Alternative service provisioning. 	<p>Within 120 minutes of breaching the trigger.</p>
<p>List the critical sectors and organisations affected, and their telephone services/details, and communicating to EETT:</p> <ul style="list-style-type: none"> • Organization. • Contact details. • Services/infrastructure offered. • Priority services used. 	<p>Within 120 minutes of breaching trigger.</p>

Question 9: If you disagree with the proposed actions/activities please justify your opinion and make alternative suggestions.

3.3.4 Ways and Methods of activating the Contingency Action Plans implementation

The ways and methods of activating the CMT and the implementation of the contingency action plans are represented in the following table (Table 9) ([Section 4.7 Annex A](#)).

Table 9: Ways and Methods of Invoking the CMT and the Contingency Action Plans



Once a trigger has been breached and the Carrier is required to contact the NTC Information Desk, attention should be given to the points that follow.

- A **single phone number** will be available on a 24x7 basis, with the phone number being widely known and publicised – this number covers both the users (Critical Sectors and Organizations) and the Carrier organisations. As an alternative, a mobile telephone will also be available and publicised. These numbers will be part of the Carriers' priority list.

The Carrier must pass across the following **details**:

- Caller's name and contact details.
 - Organisation.
 - Who is operating the Carrier CMT.
 - Incident and trigger breached.
 - Impact currently assessed on users.
 - Suggested remedial action.
 - Required supporting roles (from other Carriers and suppliers, etc.).
- In the event of a crisis where Carriers need to cooperate, the importance of '**confidentiality**' between Carriers, as well as EETT is crucial to the success. Decisions as to what information related to the crisis should be made available to the general public will rest with the CMT. Sensitivity to general public reaction is a key for these decisions.

Question 10: If you disagree with the proposed ways and methods please justify your opinion and make alternative suggestions.

3.4 Crisis Management and action plan

3.4.1 Crisis management definition

As already mentioned, the CMT is responsible for the crisis management. The team's organizational structure is presented in the following figure (Figure 3).

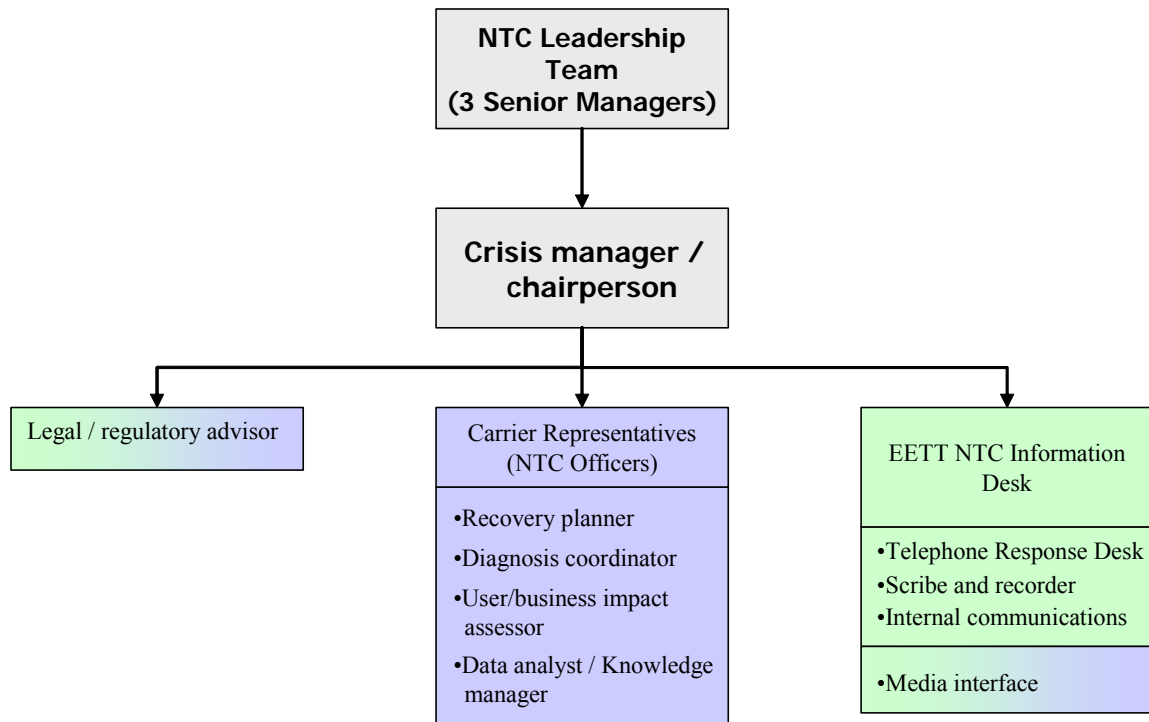


Figure 3: CMT organizational structure

The key roles required for the Crisis Management Team are presented in the following table (Table 10).

Table 10: Key roles for the Management Crisis Team.

Role	Responsibilities	Who
Crisis manager / chairperson	Convenes CMT, in accordance with the NTC Leadership Team, schedules required meetings, but most importantly facilitates cooperation between Carriers to resolve issues to the benefit of the users and Critical Sectors and organisations. Liaises with Carrier senior management to ease any problems and completes actions.	EETT
Scribe and recorder	Ensures that the sequence of events is recorded; and decisions are logged.	EETT or Carriers
Data analyst and Knowledge manager	Obtains data from the media, Government, user service desk, other bodies, archives management information and metrics for analysis by Carriers and other specialists. Liaises with the Carrier CMT.	EETT or Carriers
Media interface	Updates website, compiles media broadcasts, contacts media, makes announcements, and communicates with the Carrier media group.	EETT or Carriers
Internal communications	Facilitates telephony or other communications methods with the Carriers and other stakeholders, including internal progress and status updates. Liaises with Carrier NTC officers.	EETT or Carriers

Role	Responsibilities	Who
User/business impact assessor	Works with the various Carriers and other stakeholder organisations to determine the extent of any incident upon the general public or Critical Sectors and Organisations.	EETT or Carriers
Diagnosis coordinator	Works with the various Carriers and other stakeholder organisations to determine cause, and the ‘damage’ and issues being created by an incident. Liaises with Carrier NTC officers.	EETT or Carriers
Recovery planner	Works with the various Carriers and other stakeholder organisations to determine the recovery plans and options (including timescales etc.). Liaises with Carrier NTC officers.	EETT or Carriers
Legal and regulatory advisor	Advises the EETT Leadership Team, and also will provide advice and legal governance for certain decisions that may be required to bring the crisis to a speedier conclusion.	EETT
Telephone Response Desk	‘Freephone’ number for members of the public and Critical Businesses and the Carriers, works as a call centre taking faults, issues, information, etc.	EETT

Question 11: If you disagree with the proposed CMT organizational structure please justify your opinion and make alternative suggestions.

In a crisis event, the CMT is obliged to inform the public about the impact on the telecommunication sector (Section 5.4.4 Annex A). This communication can be made via the following manners:

- **Media.** TV and broadcasting are an integral part of the public relations and general information release by the Carriers and EETT. The key element here is for a ‘common-front’ to be presented by the Telecommunications Sector in information broadcast as to the start time, the cause, the impact and extent, the recovery status, the recovery players, the probable service resumption time, what EETT and the Carriers want the users to do and the confirmation that problem management will be undertaken.
- **Web-based.** The CMT will provide a crisis management bulletin update, including an English translation. The bulletin will include the same information as mentioned above, plus a dynamic map showing the areas affected, to include a service incident matrix, providing details of the Carriers and the Critical Services affected (e.g. mobile telephony, etc.).
- **Public Warning.** A Public Warning and Information Dissemination system can provide the vital link between the Crisis Management Team and other Government disaster support organizations and the general public. CMT should use this system to provide a crisis management bulletin and updates through Radio and TV stations in cooperation with other Government organizations. The general public will require information as to the extent of the crisis and what steps it should take in order to avoid further deterioration of the telecommunications infrastructure.

- **Communications to Government.** EETT will report directly to the Government Department of Transportation and Telecommunications and any other relevant Government Agencies.

Question 12: If you disagree with the proposed CMT communications please justify your opinion and make alternative suggestions.

Each Carrier must assign an officer of the company, who is responsible for attending the EETT NTC Crisis Management Team meetings. This role is called Carrier **NTC Officer**. This officer can be called upon at any time, and will be expected to act in the following role:

- To have direct access to the main board of directors and senior officers of his/her organization, and is comfortable about talking frankly to them about the activities required of the Carrier.
- To be empowered to discuss and make agreements for his/her organization, with or without verbal consent from the main board or senior officers.
- To negotiate with other Carriers to resolve issues in the best interests of the general public.
- To undertake a specific role in the framework of the CMT.

Question 13: If you disagree with the proposed representative's profile of each telecommunication carrier to the CMT please justify your opinion and make alternative suggestions.

If the decision demands the invocation of the CMT, it is advised that certain steps must be followed, as shown in the indicative time table below (Section 5.4.5 Annex A).

«Immediately»

For	Request
Scribe- Recorder	Record the reason for invocation, log the decisions made by the CMT, and draw up a timeline of events.
Internal Communications	Ensure ready communications with Carrier and stakeholder teams – initially contacting the Carriers and engaging their Crisis Management Teams; keep a list of all contacts and organise any recorded messages.
Media Interface	Contact the media groups within the Carriers, and liaise with main media organizations as and when required. Review press releases from Internal Communications.
Crisis manager / chairperson	Directs the CMT members to complete their duties and return periodically to update the remaining members.

“Within the first 30 minutes ...”

For	Request
Telephone Response Desk (NTC Information Desk)	Established with a remit of collating any incoming messages from Carriers, CMT members or other stakeholders (Critical Sectors and Organizations).

For	Request
Data analyst	Contacts the Carriers and retrieves the metrics etc. relating to any incident (for example, “how many telephone exchanges are out of action?” etc.).
Diagnosis coordinator	Contacts the Carriers and ascertains the current issues and incident status. Reviews Government and media information to assess wider issues.

“Within the next 30 minutes...”

For	Request
Diagnosis coordinator	Contacts the Carriers and ascertains the nature of the fault, its likely location, time to fix, and options available to clear fault without knowing the full source-root cause.
User/business impact	Investigate the impact of the incident upon the users, including number affected, regions, types of Sectors and organisations, etc.

“Within the next 60 minutes...”

For	Request
Recovery planner	Contacts the Carriers and ascertains the options available to recovering the environment and restoring service, including the likely timescales, impact, and cost.
Crisis manager	Intervene in order for other Government agencies to assist the Carriers with problem resolution if required. (i.e. clear of roads, resolve power problems, urgent equipment transport etc.)

“Within the next 60 minutes...”

For	Request
Legal and regulatory advisor	Details the legality of the recovery options and the current situation, advises accordingly

Question 14: If you disagree with the proposed steps please justify your opinion and make alternative suggestions.

For the effective invocation of the CMT, a certain series of preparatory actions is supposed to be taken (Section 5.4.6 Annex A), where the following information will be available:

- Telephone directory – EETT and Carriers.
- The Information and Crisis Management Command Centre with required facilities.
- Appropriate Crisis Management Team Communications.
- Teleconference bridge number and access.
- List of obvious questions.
- Documentation Templates for use by the CMT.

- The post consultation document. (see *ANNEX A*)
- Pre-arranged security arrangement for external CMT members.
- Carrier Crisis Management Plans.
- Availability of the Emergency Management System.
- The chosen Public Warning and Information Dissemination System.

Question 15: If you disagree with the proposed preparatory actions please justify your opinion and make alternative suggestions.

3.4.2 Closure of action plans implementation and return to normal operation

When an emergency is being resolved, the business resumption is expected to occur via the return to the normal operation (*Section 5.5 Annex A*). Nevertheless, for this reason the appropriate methods and criteria must be defined in order for the Crisis Management Team to be able to decide on the closure of the emergency action plans implementation. Is there any risk for further impacts upon the *Three Primary Beliefs*? More specifically, the criteria are the following:

Way of Life	Will the way of life be detrimentally altered any further? Will the duration of the incident pose any further longer-term implication?
Stability	Has civil stability been reaffirmed?
Human Welfare	Will there be any further human impact beyond what is reasonable, and can the NTC CMT assist in lessening the extent?

Question 16: If you disagree with the proposed approach concerning the return to normal operations please justify your opinion and make alternative suggestions.

3.4.3 Event, service, sector and trigger association.

The association of the emergency events that are external to the telecommunications, the telecommunication infrastructure, the critical telecommunication services and the critical telecommunication sectors and organizations, together with the relevant triggers, is presented in the following table (Table 11) (*Section 5.6 Annex A*).

Table 11: Association of events, services, sectors and triggers.

	TRIGGER																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
External Crisis and Emergency Event Scenarios																										
1. Chemical/Nuclear Incident (inside or outside Greece) – non fission explosion		P								R					R	R		R	R	R	R	R	R	R		
2. Nuclear Incident (inside or outside Greece) – fission explosion		P								R					R	R		R	R	R	R	R	R	R		
3. Earthquake	R	R	P							R					R	R		R	R	R	R	R	R	R		
4. Inland Flooding	R			P						R					R	R		R	R	R	R	R	R	R		
7. Coastal Flooding and Tsunami				P						R					R	R		R	R	R	R	R	R	R		
8. Forest Fire and Scrub Fires	R				P					R					R	R		R	R	R	R	R		R		
9. Acts Targeting Industrial and Commercial Centers								P															R			
10. Virus and Malicious attacks on the Carriers									P																	
12. Sudden Income Changes (for a Telecommunications company)											P	P	P													
Telecommunications Infrastructure Impact																										
1. Infrastructure Component Failure	P									R					R	R		R	R	R	R	R		R		
2. General Infrastructure Fires (e.g. fire in a major Telecom Carrier infrastructure)	R					P				R					R	R		R	R	R	R	R	R	R		
3. Acts Targeting Physical Telecommunications Infrastructure	R						P			R					R	R		R	R	R	R	R	R	R		
4. Acts Targeting Telecommunications Control and Command (NMS, TMN)	R						P			R					R	R		R	R	R	R	R	R	R		
5. Capacity Management Failure										P																
Critical Services Impact																										
1. Fixed Line Dialed (National and Local)														P							P					
2. International Direct Dialing														P			P			P						
3. Mobile Telephony														P				P		P						
4. Satellite Telephony and Data (including Maritime emergency)														P						P				P		
5. Internet Services Provision														P					P							
6. Wireless Leased Lines																				P						
7. MAN/WAN Link Services																				P						
8. Data Services																				P						

	TRIGGER																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
9. Carrier Network Interconnects																						P				
10. Fixed Leases Lines																					P					
11. Disaster Recovery and Data Centre Sites																							P			
12. Emergency and Priority Services (E112, 100, etc.)																								P		
Critical Sectors Impact																										
1. Health															P											
2. Emergency, Police, Fire, Ambulance and Rescue																P										
3. Shipping and Harbour Control																	P									
4. Civil Defense																										P
Various																										P
NOTE: P Primary trigger for specific Scenario, Critical Telecom Service and Critical Sector.																										
R Related trigger which could be breached due to specific Event Scenario																										

Question 17: If you disagree with the association of events, services, sectors and triggers please justify your opinion and make alternative suggestions.

3.4.4 Triggers and action plans

Once the Trigger is breached the process depicted in the *Action Plan Process Flow* (Figure 2) is initiated. The actions associated with each Trigger breached are summarized in the following table (Table 12) (Section 5.6 Annex A). Each triggered action presents:

- the trigger monitoring mechanism,
- the probable impact of the breach,
- any proactive activities which could have prevented the breach or minimized the impact,
- the 1st Level immediate actions which need to be performed mostly by the Carriers,
- the 2nd Level actions which will be performed by the Crisis Management team once activated, and
- the follow-up and closure of the crisis and the action plan.

Table 12: Triggers and Action Plans.

				Actions (Crisis Management)				
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
1a	The loss of infrastructure service capability equivalent to 300,000 user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute.	Carriers to monitor, record and process in real-time the required network and infrastructure statistics which, when processed, will derive the trigger points. These type of statistics are based on Network Management Systems (NMS) and not on user reported calls	Loss of user, interconnect connectivity, (due to possible loss of local loops, concentrator, switch, trunk groups, cable, microwave link, fiber etc)	Verify that the top 10 components of a Carriers network have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup systems and services such as mobile telephone exchanges, mobile cellular base stations, etc. Alternate routing abilities National or regional broadcast messages to land and mobile services informing users as to how to use telecom resources in a crisis.	Invoke NTC Action Plan	Activate Carrier internal Disaster Recovery plans. Activate call control mechanisms to reduce congestion and share resources. Activate call priority for defined Critical Services.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Update of WEB site. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review possible resilience improvements and Carrier future cooperation arrangements where required.
1b	Over 10,000 originating and terminating calls are blocked for inter-carrier communications in any 30 minute interval				Invoke Action Plan NTC			
1c	On two or more consecutive days, there are two or more instances where 10,000 user connections are interrupted for less than 30 minutes				Inform EETT			

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
2	A fission (nuclear) explosion, reported by the Government or media within the borders of Greece or within 1000 km of Greece	Carriers and EETT to monitor in real-time news broadcasts	Public panic and excessive use of telecom resources. Possible loss of telecom infrastructure.	User education on telecomm services use in the event of a disaster, distribution of information leaflets.	Invoke NTC Action Plan	Activate call control and call duration mechanism and share resources if required. Activate call priority for defined Critical Services if required.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, monitor for subsequent triggers. Update WEB. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review inter-Agency cooperation.
3	An earthquake of 6 on the Richter scale, reported by the Government or media within the borders of Greece or within 100 km of Greek territory, or above 5 Richter in any urban areas.	Carriers and EETT to monitor in real-time news broadcasts	Public panic and excessive use of telecom resources. Possible loss of infrastructure resources. Emergency situation requiring special telecom service provisioning.	Mobile base stations and mobile public telephones available for deployment to stricken areas. User education on telecomm services use in the event of a disaster, distribution of information leaflets. Telephone exchanges to be build to an earthquake-proof specification, with backup generators etc.	Invoke NTC Action Plan	Activate call control mechanisms to reduce congestion and share resources if required. Activate call priority for defined Critical Services if required.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, monitor for subsequent triggers. Deploy mobile base stations and public telephones if required. Update of WEB site. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review inter-Agency cooperation. Review Impact to infrastructure and suggest improvements.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
4	Flooding affecting any town over 5,000 people, reported by the Government or media	Carriers and EETT to monitor in real-time news broadcasts	Public panic and excessive use of telecom resources, possible loss of infrastructure resources. Emergency situation requiring special telecom service provisioning.	Mobile base stations and mobile public telephones available for deployment to stricken areas. User education on telecomm services use in the event of a disaster, distribution of information leaflets. Telephone exchanges away from potential flood areas.	Invoke NTC Action Plan	Activate call control mechanisms to reduce congestion and share resources if required. Activate call priority for defined Critical Services if required.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, monitor for subsequent triggers. Deploy mobile base stations and public telephones if required. Update of WEB site. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review inter-Agency cooperation. Review Impact to infrastructure and suggest improvements.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
5	A forest or scrubland fire reported as threatening population centers, reported by the Government or media. Will cause a secondary trigger if it impacts telecommunications infrastructure.	Carriers and EETT to monitor in real-time news broadcasts	Public panic and excessive use of telecom resources. Possible loss of telecom infrastructure.	User education on telecom services use in the event of a disaster, distribution of information leaflets. Verify that the top overhead network links have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup links and services and mobile cellular base stations. Alternate routing abilities. Place protection around telecommunications assets in regions likely to experience intense fires (forest or otherwise, such as major oil storage works etc.)	Inform EETT	If no impact to telecom infrastructure monitor the event. If congestion occurs activate Carrier internal Disaster Recovery plans. Activate call control mechanisms to reduce congestion and share resources. Activate call priority for defined Critical Services.	EETT will monitor the situation and the information provided by the Carriers. If necessary NTC will be invoked and CMT will be activated. Update of WEB site.	Depends on the extend of the event and possible impact to telecommunication infrastructure. Review telecommunications needs of responding agencies (Fire, Police).

			Actions (Crisis Management)					
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
6	Any fire in any switching station, cable termination centre, or other Carrier establishment where hardware needed to support telecommunication services is damaged. Will cause a secondary trigger if it impacts telecommunications services.	Carriers to monitor telecommunications facilities environmental conditions.	Loss of connectivity and services, (due to possible loss of local loops, concentrator, switch, trunk groups, cable, microwave link, fiber etc)	Verify that the top 10 components of a Carriers network have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of environmental monitoring (Fire, Smoke detection). Existence of backup systems and services such as mobile telephone exchanges, mobile cellular base stations, etc. Alternate routing abilities. National or regional broadcast messages to land and mobile services informing users as to how to use telecom resources in a crisis.	Inform EETT	Activate Carrier internal Disaster Recovery plans. Activate call control and call duration mechanism to reduce congestion and share resources. Activate call priority for defined Critical Services. Deploy available backup systems.	EETT will monitor situation and activate CMT if appropriate. Upon activation CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Coordination for inter-carrier equipment and resource sharing where applicable. Mitigation of legal issues. Coordination with Government Agencies where appropriate. Update of WEB site.Interface with media.	CMT to document crisis and resolution. Review possible resilience improvements and Carrier future cooperation arrangements where required.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
7	An actual terrorist act or perceived terrorist threat against telecommunications infrastructure, reported by the Government or media.	Carriers and EETT to monitor in real-time news broadcasts	Potential for telecom infrastructure impact resulting in other triggers being breached.	Carrier premise security enhancement, bomb proofing, manhole protection etc.	Invoke NTC Action Plan	Carriers to increase security alert at all facilities. Prepare for disaster recovery activation.	CMT Activation. Monitor situation. Liaison with Government Agencies and interface with Carriers.	Issue Problem Management Report, Lease with Related Government agencies to review interaction during event.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
8	An actual terrorist act resulting in the loss of life or the closure of multiple businesses reported by the Government or media	Carriers and EETT to monitor in real-time news broadcasts.	Potential for excessive network activity. Potential for business telecommunications services disruptions.	Carriers should have Business Customer support centers and processes. Carrier premise security enhancement, bomb proofing, manhole protection etc.	Inform EETT	Prepare to support Business Customers disaster recovery plans such as circuit and connectivity switch over to alternate data centers, telephony traffic to chosen call centers and any other activity chose by the businesses impacted. Carriers to increase own security alert and prepare for disaster recovery activation.	EETT will monitor situation and will invoke NTC if necessary. Liaison with Government Agencies and interface with Carriers.	Issue Problem Management Report, Lease with Related Government agencies to review interaction during event.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
9	Any unauthorized internal or external malicious attack on the Carriers affecting the ability to deliver service or to secure personal data records of consumers and businesses	Carriers to monitor IT systems.	Potential for telecom services impact and personal data breach.	Carriers should have proper information security policy for staff and customers, fire walled systems, DMZ zones etc. Perform annual systems penetration tests.	Inform EETT	Carriers to identify, deactivate and patch breached system.	Carriers to identify extend of breach, confirm data validity, remedy accordingly. Interface with media.	N/A
10	Capacity on any element of the telecommunications infrastructure where traffic exceeds 90% of total possible traffic, in any single exchange, switching centre, communications paths (e.g. cabling)	Carriers to monitor in real-time the capacity of the networks, with appropriate alerts, and ability to report on changes over a 1 year period.	Potential for network congestion and user outages.	Capacity planning, mechanisms for reallocating resources such as bandwidth, trunk capacity, systems processing. Mechanisms and processes for call management (Call Priority, Call Duration Control, Rate Control, Call Percentage Control, Call Blocking Control, Call Gapping)	Inform EETT	Activate call control mechanisms to reduce congestion and share resources if required. Activate call priority for defined Critical Services if required.	EETT will monitor situation and activate CMT if appropriate. Upon activation CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Coordination for inter-carrier capacity issues.	If CMT is activated, issue Problem Management Report, document resolution, review workaround and agree on enhancements for future problem avoidance.
11	Any Carrier share-price drop of 30% in a week, or any operational financial loss, or any financial irregularities identified by auditors or other agents	Carriers and EETT to monitor in real-time news broadcasts	Potential for business collapse and user services impact.	N/A	Inform EETT	N/A	EETT will monitor situation and activate CMT if appropriate. If CMT is activated review potential customer risk.	N/A

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
12	Annual investment report and update via the Service Management report. Where EETT believes the investment profile may not be commensurate with the Three Primary Beliefs	Carriers to deliver an annual investment report to EETT, detailing the total investment in infrastructure and the planned changes in infrastructure, over the next 5 years	Impact in infrastructure survivability, resiliency, capacity. Potential for service level deterioration.	Infrastructure, technology investments in line with revenues, customer levels, industry refresh trends, and technology trends.	Service Management Report (See Section 6.1)	Carriers to prepare and submit report bi-annually.	EETT will monitor situation provide guidance and statistics when and where appropriate.	EETT will award excellence when appropriate.
13	Any medical-related announcement regarding mobile Carrier activity that is followed, within a week, by a 25% drop in call traffic volumes to and from mobile telephone users	Carriers and EETT to monitor public news broadcast. Create new or enhance existing Telecom Leadership Forum consisting of representation of the Carriers and EETT	Potential for impacting mobile usage and industry survivability.	Instructions on proper use of mobile technology. Publicizing of relevant studies and reports.	Telecoms Leadership Forum	Carrier participation in Leadership Forum and establishment of common approach.	EETT will participate in Telecom Leadership Forum and will monitor situation providing guidance and information when and where appropriate. Interface with media.	N/A
14	Annual traffic report showing peak flows and problems	Carriers to monitor traffic statistics	Identification of potential issues and trends which could impact services.		Service Management Report	Carriers to prepare and submit report bi-annually.	EETT will monitor situation provide guidance and statistics when and where appropriate. Interface with media.	N/A

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
15	Any registered hospital telecommunications outage for more than 60 minutes	Carriers to report to EETT Emergency user complaint. The organization/Sector holding the priority number has an obligation to report outages to EETT as part of the arrangement of being made 'a priority service'.	Impacting the wellbeing of the general public.	Carrier review of hospital telecommunications, and suggest recommendation for resilient service implementation and back-up solutions where appropriate.	Invoke NTC Action Plan	Identify problem area. Network prioritization of impacted service. Rerouting of relevant traffic in coordination with impacted hospital.	CMT Activation. CMT decisions on call prioritization parameter modifications. Coordination between involved carriers, coordination with impacted hospital, coordination with relevant Government Agency where appropriate. Interface with media. Interface with media.	Issue Problem Management Report. Identification of root problem, and coordination with impacted hospital for alternative and back-up solutions where appropriate.
16	Any registered Fire, Ambulance and Rescue fixed or mobile telecommunications outage for more than 30 minutes	Carriers to report to EETT Emergency user complaint. The organization/Sector holding the priority number has an obligation to report outages to EETT as part of the arrangement of being made 'a priority service'.	Impacting the wellbeing of the general public.	Carrier review of emergency agency telecommunications, and suggest possible recommendation for resilient service implementation and back-up solutions where appropriate.	Invoke NTC Action Plan	Identify problem area. Network prioritization of impacted service. Rerouting of relevant traffic in coordination with impacted emergency agency.	CMT Activation. CMT decisions on call prioritization parameter modifications. Coordination between involved carriers, coordination with impacted emergency agency, coordination with relevant Government Agency where appropriate. Interface with media.	Issue Problem Management Report. Identification of root problem, and coordination with impacted emergency agency for alternative and back-up solutions where appropriate.

		Actions (Crisis Management)						Follow-Up (Sections 5.5 and 6.2 Annex A)
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	
17	Any registered shipping and harbour control telecommunications outage for more than 60 minutes	Carriers to report to EETT any Shipping and Harbour control complaint. Emergency user complaint	Impact to the general public established way of life and national economic wellbeing.	Carrier review of agency telecommunications, and suggest possible recommendation for resilient service implementation and back-up solutions where appropriate.	Invoke NTC Action Plan	Identify problem area. Network prioritization of impacted service. Rerouting of relevant traffic in coordination with impacted agency.	CMT Activation. CMT decisions on call prioritization parameter modifications. Coordination between involved carriers, coordination with impacted agency, coordination with relevant Government Agency where appropriate. Interface with media.	Issue Problem Management Report. Identification of root problem, and coordination with impacted agency for alternative and back-up solutions where appropriate.

			Actions (Crisis Management)					
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
18a	Failure of international service resulting in 5,000+ failed international calls within a 30-minute interval (could be caused by routing difficulties, transmission, etc.)	Carriers to monitor and process call statistics and in real-time	Failure of incoming and outgoing international traffic	Verify that the top network elements associated with international traffic have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup systems and services such as mobile telephone exchanges, etc. Alternate routing abilities.	Invoke NTC Action Plan	Activate Carrier internal Disaster Recovery plans. Activate call control mechanisms to reduce congestion and share resources. Deploy available backup systems.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Update of WEB site. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review possible resilience improvements and Carrier future cooperation arrangements where required.
18b	Over 15,000 originating and terminating international calls are blocked for Inter-carrier communications in any 30 minute interval				Invoke NTC Action Plan			
18c	The loss of infrastructure service capability equivalent to 150,000 international user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute				Invoke NTC Action Plan			

			Actions (Crisis Management)					
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
19a	The loss of 5,000 potential mobile telecom users brought about by a single incident, root-cause, or within a 30-minutes interval. To estimate the potential users the affected system capacity should be multiplied by a contention factor of 10. Thus an MSC which is capable of handling 500 simultaneous calls would potentially impact 500x10=5,000 users.	Carriers to monitor and process call statistics and in real-time	Failure of mobile telecommunications services.	Verify that the top network elements associated with mobile services have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup systems and services such as transportable mobile telephone exchanges, base stations etc. Alternate routing abilities.	Invoke NTC Action Plan	Activate Carrier internal Disaster Recovery plans. Send SMS to users and inform them about call restrictions. Activate call control mechanisms to reduce congestion and share resources. Activate Critical Services priority mechanisms. Deploy available backup systems such as transportable base stations.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Coordinate between Carriers for resource sharing. Coordinate between carriers for Critical Sector service restoration where appropriate. Update of WEB site. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review possible resilience improvements and Carrier future cooperation arrangements where required.
19b	The loss of mobile infrastructure service capability equivalent to 150,000 user minutes within any 30-minute interval that comprises of 2 or 3 separate instances. A user minute is an outage of 1 user access for 1 minute. The number of users is calculated as in the previous trigger point.				Invoke NTC Action Plan			

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
19c	The concurrent total or partial loss of service for 4+ ‘cells’ (based around a mast) for a total of 30 minutes (i.e. 4 cells inactive due to the same root-cause during a 30 minute interval) brought about by a single incident or root-cause				Invoke NTC Action Plan			
19d	Over 15,000 originating and terminating calls are blocked for inter-carrier communications in any 30 minute interval				Invoke NTC Action Plan			
20	Loss of Internet telecommunications connectivity to an ISP impacting more than 10,000 users for more than 30 minutes	Carriers to inform EETT about ISP complaint. ISP can also inform EETT directly.	Loss of Internet access to public users.	Carrier review of ISP telecommunications arrangements, and suggest possible recommendation for resilient service implementation and back-up solutions where appropriate.	Invoke NTC Action Plan	Identify problem area. Network prioritization of impacted service. Rerouting of relevant traffic in coordination with impacted ISP.	CMT Activation. CMT decisions on network prioritization parameter modifications. Coordination between involved carriers, coordination with impacted ISP. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Review possible resilience improvements. Review connectivity with ISP and suggest alternatives and improvements.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
21	The loss of or disruption to any service group affecting more than 30% of the subscribers using those services within any single switching exchange / transmission center	Carriers to monitor traffic and network statistics.	Loss of telecommunication service such as fixed, wireless leased lines, WAN/MAN services, Data service, satellite services etc.	Verify that the associated components of a Carriers network have suitable resilience. Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup systems and services. Alternate routing abilities. Work with customers using services to suggest resilience and back facilities.	Invoke NTC Action Plan	Activate Carrier internal Disaster Recovery plans. Activate network control mechanisms to reduce congestion and share resources where appropriate. Deploy available backup systems.	CMT Activation. CMT decisions on resource allocation, network control parameter modifications, restoration coordination, and remedial actions. Coordination with key impacted users. Interface with media.	Issue Problem Management Report.CMT to document crisis and resolution. Review possible resilience improvements. Review connectivity with key impacted users and suggest alternatives and improvements.

		Actions (Crisis Management)						Follow-Up (Sections 5.5 and 6.2 Annex A)
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	
22	A 90% utilization for any Carrier-Carrier interconnects lasting for a continuous period of 30 minutes or more.	Carriers to monitor traffic statistics.	Impact to alternative carrier services	In coordination with Alternative carrier perform capacity planning, introduce mechanisms for reallocating resources such as bandwidth, trunk capacity, systems processing. Mechanisms and processes for call management (Call Priority, Call Duration Control, Rate Control, Call Percentage Control, Call Blocking Control, Call Gapping)	Inform EETT	In cooperation with impacted Alternative carrier activate call control mechanisms to reduce congestion and share resources if required. Activate alternative routing where available. Activate call priority for defined Critical Services if required.	EETT will monitor situation and activate CMT if appropriate. Upon activation CMT decisions on resource allocation, call control parameter modifications, restoration coordination, and remedial actions. Coordination for inter-carrier capacity issues.	Issue Problem Management Report. CMT to document crisis and resolution. Coordinate between carriers. Review connectivity architecture and suggest alternatives and improvements.

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
23	Loss of a Carrier Data/Network Management Centre, or a Critical Sector Data Centre managed by the Carrier.	Carriers to monitor environments	Loss of carrier data/network management and control. Loss of Critical Sector IT and telecom environments.	Carrier alternate data/network management facilities. For Carrier and Carrier managed Data Center environments deployment of environmental monitoring (fire/smoke detection, water detection etc). Deployment of proper air-conditioning, UPS power, generators. Resilient connectivity arrangements	Invoke NTC Action Plan	Activate Carrier internal Disaster Recovery plans. Activate alternate data/network management center.	CMT Activation. Assist impacted Carrier/Critical Sector with: Inter-carrier coordination/cooperation activities, assistance requirements from Government agencies, assistance requirements from public utilities. Interface with media.	Issue Problem Management Report. CMT to document crisis and resolution. Consolidate damage assessments and provide status reports. Review possible resilience improvements and Carrier future cooperation arrangements where required.

			Actions (Crisis Management)					
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
24a	100 failed attempts to access Emergency or Priority numbers (100, 166, 199, 112, etc.) in a duration, which needs to be agreed with the Emergency Service operator.	The Carriers to monitor and process call attempts. The Emergency Services operator to monitor call processing.	Impacting the wellbeing of the general public.	Carrier review of emergency agency telecommunications, and suggest possible recommendation for resilient service implementation and back-up solutions where appropriate. Have available call priority mechanisms for all Emergency and Critical sector calls.	Invoke NTC Action Plan	Identify problem area. Initiate call prioritization of impacted service. Rerouting of relevant traffic in coordination with impacted emergency agency.	CMT Activation. CMT decisions on call prioritization parameter modifications. Coordination between involved carriers, coordination with impacted emergency agency, coordination with relevant Government Agency where appropriate. Coordinate recovery activities. Monitor response operations. Communicate, coordinate and pass information to all stakeholders. Consolidate damage assessments and provide status reports. Ensure that the management and recovery activities are within the law.Interface with media.	Issue Problem Management Report. Identification of root problem, and coordination with impacted emergency agency for alternative and back-up solutions where appropriate.
24b	No ability to originate, terminate, or complete calls related to Emergency or Priority numbers for more than 30 minutes.				Invoke NTC Action Plan			

		Actions (Crisis Management)						
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
25	Service interruption or serious downgrading of service for more than 30 minutes offered by Hellas-Sat	Carrier to monitor satellite operation.	Loss of satellite delivered services	Verify that the associated components of a Carriers network have suitable resilience (alternate transponders, uplink earth-station etc.). Regularly reviewing Business Continuity plans, network topology and maintenance arrangements. Existence of backup systems and services. For critical services suggest to customers possible terrestrial alternate routing abilities.	Invoke NTC Action Plan	Identify root cause. Activate back-up, alternate path where available (alternate transponders, earth station etc)	CMT Activation. Coordinate recovery activities. Monitor response operations. Communicate, coordinate and pass information to all stakeholders. Consolidate damage assessments and provide status reports. Ensure that the management and recovery activities are within the law.	Issue Problem Management Report, Document problem and resolution.

			Actions (Crisis Management)					
Trigger (Section 3.2 Annex A)		Trigger Monitoring	Resulting in	Proactive preparation (Section 7 Annex A)	NTC Action Plan (Section 4 Annex A)	1 st level- immediate (Sections 4.6 and 5.3 Annex A)	2nd level- after CMT meeting (Section 5.4 Annex A)	Follow-Up (Sections 5.5 and 6.2 Annex A)
26a	Deadly disease epidemic or pandemic that causes death in 50% of cases, or is likely to cause more than 50,000 deaths in Greece, that is either already within Greece or that will soon reach Greece	Carriers and EETT to monitor in real-time news broadcasts	Public panic and excessive use of telecom resources, Emergency situation might require special telecom service provisioning.	User education on telecomm services use in the event of a disaster, distribution of information leaflets. Carrier staff immunization arrangements.	Invoke NTC Action Plan	Activate call control mechanisms to reduce congestion and share resources if required. Activate call priority for defined Critical Services if required.	CMT Activation. CMT decisions on resource allocation, call control parameter modifications, monitor for subsequent triggers. Update of WEB site. Interface with media.	Issue Problem Management Report, Document problem and resolution. Review emergency relief Government Agency requirements/cooperation.
26b	At least 200 user complaints to the offices of EETT within one working day, relating to any single telecommunications service or with reference to any single root cause	EETT will monitor complain activity	Possible service outage, or trigger point about to be breached.	N/A	Invoke NTC Action Plan		CMT Activation. CMT investigation of root cause and source of trouble. Coordination with Carriers to resolve user complains. Update of WEB site.	Issue Problem Management Report, Document problem and resolution.
26c	Carrier unable to collect and process a relevant trigger metric for a period of over 1 hour	Carriers to monitor trigger process.	Carriers unable to determine trigger breach	Resiliency in IT, network management systems. Documented processes for monitoring trigger points.	Inform EETT	Restore Capability	EETT will monitor situation through reports provided by the relevant Carrier.	Issue Problem Management Report, Document problem and resolution.

Question 18: If you disagree with any of the proposed actions please justify your opinion and make alternative suggestions.

Question 19: In your opinion, which other actions could be implemented for the resolution of an emergency situation? Please justify your answer.

In the previous table (Table 12), the 1st level-immediate actions that the Carriers must implement refer to a series of tools designed for the resolution of the crisis. The most important of those tools are presented below. After their initial and possible immediate activation upon the CMT activation, any changes regarding the parameters of those tools/methods will depend on decisions made by the CMT (Section 5.3 Annex A). The proposed tools/methods are the following:

- 1 ***Call prioritization.*** It is recommended that two levels of priority are established:
 - ***Level A:*** Incoming (General public-to-agency) Critical Sector telephone services to agencies like Police (100), Fire Brigade (199), Ambulance service (166) and general emergency (112), will be given the highest priority over all other calls in both the fixed and mobile networks for the impacted area/region. Priority must also be provided to the CMT's telecommunication services.
 - ***Level B:*** Level A plus all incoming and outgoing calls to pre-defined Governmental, Public Safety, Military and Health sectors. The list of telephone numbers will be established upon agreement by EETT with the related sectors and will be made available to all Carriers.
- 2 ***Call duration control.*** It is recommended that the access to the operating telecommunication services should be permitted to more individuals of the population. Call Duration Control should not be implemented for the predefined Critical Sector numbers. The Carriers should primarily impose Call Duration Control to incoming calls to the impacted area/region, resorting to outgoing call control in extreme conditions. If variable duration call control mechanisms are available, Carriers should implement a control duration which will eliminate congestion while maximizing the call duration. If variable duration mechanisms are not available ***a two minute call duration allowance is recommended*** for calls intended for the stricken area/region.

Call Duration Control should be implemented across all switching centres equally if possible, avoiding discriminating against easy targets.
- 3 ***Other call controls.*** Various call control mechanisms exist that must be available and must be used by the cooperation of EETT and the Carriers during a critical event. Such mechanisms are the following:
 - Call Rate Control (i.e. allow 4 calls every 30 seconds per exchange).
 - Call Percentage Control (i.e. 30% of calls allowed to transit).
 - Call Blocking (calls not allowed to a specific destination).
 - Call Gapping (sets the upper limit of calls to a specific destination).

Question 20: If you disagree with the proposed actions concerning call prioritizations and the call duration control during times of emergency please justify your opinion and make alternative suggestions.

Question 21: Suggest some additional immediate actions that can be supported by your networks for the resolution of problems arising during a crisis.

3.5 Reporting

3.5.1 Submission of biannual reports

The collection of data and information that will support EETT, the Crisis Management Team and the telecommunication carriers to accumulate experience and to improve their procedures regarding the resolution of the emergency situations, requires the development and submission of biannual service management reports ([Section 6.1 Annex A](#)) that must include all the data presented in the table below (Table 13).

Table 13: Information concerning the carriers biannual service management reports.

Heading	Required data and KPI's
Congestion (80-90% capacity utilization)	<ul style="list-style-type: none"> • User accounts • Interconnects (state adjoining Carriers) • Bandwidth • International traffic • Mobile masts (number of cells experiencing congestion, location of these cells, etc.) • Areas where there is congestion (service, technical, demographic; and geographical)
Incidents	<ul style="list-style-type: none"> • Services affected (and to what extent) • Infrastructure affected (and to what extent) • Critical Sectors and Organizations affected (and to what extent) • Emergency numbers affected (and to what extent) • Use of priority numbers and routing • Average time to resolve • Total number of concurrent incidents (per hour if possible)
Problems	<ul style="list-style-type: none"> • Top 10 incident types • Mitigating action required to resolve top-10
Capacity	<ul style="list-style-type: none"> • Total number of users per service • Average spare capacity per exchange • Available numbers versus used numbers
Availability	<ul style="list-style-type: none"> • Availability of the Critical Services

Heading	Required data and KPI's
Investment Appraisal	<ul style="list-style-type: none"> Capital investment planned every year for the next 5 years (nominally and as a percentage of current assets) Breakdown between replacement investment and upgrade / improvement investment
Business Continuity	<ul style="list-style-type: none"> Internal Business Continuity Management Officer Carrier's NTC Interface Officer Number of internal Business Continuity invocations

The reports will be released on 1st June every calendar year (covering the period 1st November - 1st May) and on 1st December (covering the period 1st May - 1st November).

All carriers that have been granted a license by EETT must submit reports that will be reviewed by EETT. There is always the possibility of further investigations for the understanding of all details that are included in those reports.

The relevant steps are the following:

- EETT will submit a biannual Service Management template and definition as to the requirements and boundaries of all the metrics and KPI's.
- Carriers will submit the response to the 'template questionnaire' in the form of the Service Management Report.
- EETT will release a 'Survey of Telecommunications Services' 3 months after the Carriers submit their Service Management Report. This will be in confidence [i.e. no Carriers mentioned by name], and will show the 'average' performance (i.e. as a % of Carrier total capacity etc.).

Question 22: If you disagree with the proposed approach concerning the reports submission (submission time intervals, content, improvement of EETT's questionnaire for the upgrading of the collected information) please justify your opinion and make alternative suggestions.

3.5.2 Problem Management Report Development

The collection of carrier's information by EETT will result in an attempt to establish best practices concerning the resolution of emergency situations. In this context it is recommended to develop a Problem Management Report that will identify ways and methods for a more effective response to the emergency situations ([Section 6.2 Annex A](#)).

The reports should be released within 30 days of the service resumption following an invocation of the NTC CMT, or from informing EETT that there has been a breach of a trigger, or from the point that a trigger was breached.

The CMT will oversee the production of the report, liaising with the Carriers involved. Those Carriers are expected to forward the information upon request to the CMT, including the following:

- Date/time and duration, from first report of incident, to when the NTC CMT was invoked, through to closure.
- Crisis name.
- Brief description of crisis.
- Trigger point.
- How the crisis manifested itself, along with a sequence of events.
- Impact on Critical Services, Critical Sectors and Organizations, and general public communities – including metrics relating to coverage, accounts affected, etc.
- Affect on the Carrier organization.
- How crisis management evolved during the process, the decision process, etc.
- The stakeholders (including names) involved – customers/users, EETT staff, Carrier staff, etc.
- Relationship and interaction between stakeholders.
- Remedial action undertaken to ensure service resumption.
- Activities done well – activities done not so well.
- Cost of recovery, cost of outage (during the outage period).
- Conclusion and recommended alterations and action plan to further mitigate.
- Other information.

Questions 23: If you disagree with the proposed approach concerning the development of the reports (submission time intervals, content) please justify your opinion and make alternative suggestions.

3.6 Management Crisis Tools

3.6.1 Crisis Management Command Center

The response to crisis requires the creation of a fully equipped crisis management command center that will have sufficient communication capabilities and a web site ([Section 7.1 Annex A](#)).

A “Command and Information Centre” is required as the basis from where the Critical Events will be managed and the CMT will use it as their command centre. During instances of disaster events the situation centre should:

- Be the joint command, control and contact centre for all CMT activity.

- Be the interface point to the public with respect to telecommunications Disaster Recovery.
- Be the place of Public Warning and Information Dissemination System operation (Section 7.2.1.1 Annex A).
- Be the telecommunications environment interface to other Government crisis management agencies.

This centre should be established in a secure, resilient and hardened facility in order to survive potential impact from the specific event. In order to be adequately equipped, at all times awaiting invocations it should incorporate the following:

1. PCs, printer, software.
2. Telephony access to Carriers.
3. The chosen communications tools for each CMT member (mobile, beeper, TETRA etc.).
4. UPS power.
5. Access to the Public Warning and Information Dissemination System (Section 7.2.1.2 Annex A).
6. Access to the WEB site described below.
7. The document that includes the proposed way of resolving crisis (meaning, the **Annex A** document).
8. Access to the Emergency Management System described below.
9. Access to the call tree and other contact information.

The importance of communications between CMT members, EETT, Carriers and other organizations during ICMCC activation after a disaster should be assessed on a correct basis. During either an alert or a mobilization, team members need to rapidly get in touch and stay in touch with each other using means such as pagers, fixed telephony, mobile telephony, teleconference bridge, CB hand-held radio, satellite and TETRA units.

Furthermore, the proper organization of the ICMCC and the need to inform the citizens, sets the requirement for a website that will contain a publicly accessible section and a password protected secure section. This website will include indicative information concerning the social behavior, the emergency response numbers and procedures, the basic description of disaster scenarios and the associated action plan, information regarding availability of Emergency Services (provided by Telecom Carriers), information regarding the health of the telecommunications infrastructure of all Carriers (provided by the Telecom Carriers and possibly viewable only by the Carriers and EETT), the Crisis Team contact information and the action plans in times of emergency.

Question 24: If you disagree with the proposed approach concerning the crisis management command center please justify your opinion and make alternative suggestions.

3.6.2 Disaster Recovery Environment

For the resolution of the emergency situations many tools may be employed ([Section 7.3.1 Annex A](#)), one of which is SMS that can be used for the following communication scenarios:

- Communication from authorities to users that includes a SMS broadcast to a certain area to warn or inform citizens about an incident. This could be used by the Crisis Management Team during an emergency situation to advice uses in a stricken geographical area.
- Communication from users to authorities that may be useful when no emergency call is possible.
- Communications from Carriers to users in order to advice the users as to network related issues during emergency situations.

Question 25: If you disagree with the SMS usage as a tool for informing the public please justify your opinion and make alternative suggestions.

Question 26: Do you have any suggestions for the usage of those messages?

3.7 Further Remarks and Comments

Please add any remarks or comments along with the relevant justification.