

Managing radio frequencies in a crisis situation

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Abstract:

Feedback from major crises during the past twenty years reveals that disorganized communications are a key factor that makes a crisis worse for governments to handle and for people who are trying to contact rescue services, authorities or family members and friends. Radio frequencies are being more intensively used for mobile telephones (GSM) and radio receiver-transmitters (PR4G for the French armed forces, ACROPOL for the police and ANTARES for rescue services). Since these frequencies are a scarce resource, it is necessary to be able to reassign them fast, for example during a terrorist attack. For this reason, the prime minister has issued an edict for exceptionally assigning additional frequencies to the ministries of the Interior and of the Armed Forces in case of menaces.

Article L.1111-1 of the Defense Code: *“The strategy of national security has the objective of identifying all threats and risks that might affect the life of the nation (with regard to the protection of the population, territorial integrity and the permanence of the Republic’s institutions) and of determining the responses that public authorities have to make.”*

As feedback from experiences of the major, most significant crises during the past twenty years has shown, disorganized telecommunications is a major aggravating factor of catastrophes. Current means of communication allow for a coordination of crisis management and much faster reaction times. It is important for the people affected by a crisis to have at their disposal the means for asking questions and entering into contact with rescue services, forces of security, and loved ones.¹

During the attack against the World Trade Center in Manhattan on 11 September 2001, 200,000 telephone and 100,000 computer lines were knocked out of service; mobile telephone systems were saturated; and radio communications, disorganized. All this seriously affected the organization of rescue operations and took a toll of lives. During the explosion in 2001 at the AZF factory in Toulouse, all lines of communication, wire or mobile, were soon saturated, apart from the resilient RIMBAUD network (Réseau Interministériel de Base Uniformément Durci) and radio services for rescue operations. The 2015 attack on the Bataclan in Paris also resulted in a saturation of mobile telephone networks and affected the synchronization of first-responders’ radios. Hurricane Irma caused a total blackout on 6 September 2017. The return to normal was finally achieved seven days later once an undersea cable was repaired, Radio-Guadeloupe and TNT came back on the air (9 September) and the coverage of mobile networks was gradually retrieved (13-14 September). More recently, on the sidelines of the “Yellow Vest” demonstrations in France, attempts were made to destroy broadcasting equipment (for TDF) and other means of communication, probably with the goal of isolating people and keeping authorities from communicating.

So, it is of vital importance to ask questions about managing radio frequencies during a crisis.

¹ This article, including quotations from French sources, has been translated from French by Noal Mellott (Omaha Beach, France).

Responsibilities during a crisis

The political and strategic leadership for responding to a major crisis lies in the hands of the prime minister in conjunction with the president. Together, these two officials set the objectives for bringing the crisis to an end and approve the strategies for international relations and communications. Under Article 20 of the French Constitution, the prime minister heads the action of the government. For this reason, he “*prepares and coordinates public authorities’ actions in case of a major crisis*” (Article L.1131-1 of the Defense Code). To perform his duties during a crisis, he relies on the Secretariat-General for National Defense and Security (SGDSN: Secrétariat Général de la Défense et de la Sécurité Nationale).

During a crisis, the SGDSN is responsible for the interministerial planning of defense and national security, overseeing the application of these plans and conducting exercises for making the plans operational. This assignment of planning is intended to: prepare the nation in all respects (official or not) for major crises and see to the continuity of the nation and the state’s essential functions. An important section in these plans is devoted to communication, the flows of information that have to be sustained with society and between the actors managing the crisis.

Communications during a crisis

The many means of communication that have to transmit voices, data and images also have to be resilient since they must function despite threats against telecommunications: saturation, downtime, breakdowns, network crashes, natural and industrial catastrophes, malevolent actions, physical or cyber attacks, and the unavailability of human resources.

Vocal exchanges are still the preferred means for rapidly transmitting orders, instructions and information. Telephone and radio services, since they are easy to operate, are the preferred means for interaction between correspondents. When of good quality, vocal exchanges also help identify the parties to the exchange. Other data transmission services (texting, multimedia messaging, web portals, videophones) are used during a crisis when the more mobility is needed. They serve to share information with a large number of parties.

As crises become more frequent (even regular) occurrences with more brunt, a fundamental point to take under consideration is how radio communications are to be used for crisis management. The air waves enable authorities to perform their duties in such times.

Crisis management is horizontal locally (at the level of a department and neighboring departments) but vertical toward the zone of defense and security and toward the central ministerial level (crisis centers, cabinets, top-level defense services, central administrations, CIC).

At the local level, prefects represent the central government in France’s departments. Given their leading role in crisis management (under Decree 2004-734 of 29 April 2004), prefects are the only competent authority for issuing measures about law and order, public safety, security, and hygiene. They can rely on support from the zone of defense and security when events exceed the capacities available within the department.

Before a crisis, prefects have to foresee risks and prepare the response of government officials. They have to identify risks and prepare the population. To fulfill this assignment, the prefect can reinforce his crisis unit: the departmental operational center (COD: *centre opérationnel départemental*). The COD groups all actors in the crisis who are in contact with actors in the field. This interministerial tool of crisis management has to oversee the passing of information from the field. It has to analyze this information and convey it to the prefect in order to prepare decision-making and a strategy for managing the crisis. Prefects rely on state services in their departments: interministerial interdepartmental services, the department’s commander of the gendarmerie, the department’s director of public security, and the department’s military delegate.

Radio communications

The radio-frequency spectrum used for communication via the airwaves is a scarce economic resource very much in demand. Therefore, the state has regulated it.²

In practice, everyday management of the spectrum is distributed between a small number of competent authorities (*affectaires*), namely the major state administrations that use radio frequencies: the ministries of the Interior, Defense, Equipment (administrations for civil aviation, weather services, ports and maritime navigation), Research and Space; the Regulatory Authority of Electronic Communications (ARCEP: Autorité de Régulation des Communications Électroniques et des Postes); the High Audiovisual Council (CSA: Conseil Supérieur de l'Audiovisuel); and the local governments of New Caledonia and French Polynesia overseas. These authorities may assign, each using their own procedures, the radio bands in their competence to public or private users. These assignments are registered in the national table of frequency bands (TNRBF), which is kept by the ANFR (Agence Nationale des Fréquences) and validated by the prime minister.

*"In case of threats against a part of the territory, a sector of national life or a fraction of the population", law and order and state security require that only the necessary transmissions will be authorized and then under the state's control. In such circumstances, the power is foreseen "to subject to controls and to distribute energy resources, raw materials, industrial products and necessary supplies and, for this purpose, impose the necessary restraints on physical or legal persons or their belongings".*³ During a crisis, the organizations in charge of homeland security, law and order work intensely. Radio frequencies are needed to varying degrees, especially for transmissions and for using tools of detection for civil or military defense purposes. This growing need can be satisfied only by taking over the frequencies assigned to users with lesser priority.

In time of peace, it is, therefore, necessary to precisely identify and list the frequency bands liable to be reassigned to forces of defense and security during a crisis, to make a list of the radio stations with priority for defense, security and government communications (the stations to be protected and to be permanently operational), and to foresee the restrictions to be imposed on other stations.

Frequency reallocations during an emergency

In liaison with the administrations and authorities concerned, the ANFR establishes and updates, for the secretary-general of National Defense and following his instructions, the national table of frequency bands (TNRBF) and the memoranda that will be effective during the crisis. The Code of Electronic Communications (Art. R20-44-11) confers on the ANFR the allocation of frequency bands between the aforementioned competent authorities and administrations. These allocations are registered in the TNRBF, which is approved by the prime minister.⁴ Modifications of the TNRBF are made in pace with world radiocommunication conferences, which these competent authorities attend. In addition, the ANFR oversees the management of frequencies and their uses.⁵

When a competent authority, such as the Ministry of Defense, wants priority, even temporarily, on a frequency band not allocated to it, it has to demand the ANFR's authorization. This agency then conducts joint talks with the other competent authorities and administrations in order to draft a proposal for modifying the TNRBF. This procedure is not adapted to an emergency situation because it takes too long, evidence of this coming from the attacks in Paris on

² As stipulated in Article L.41ff of the Code of Electronic Communications (CPCE: Code des Postes et des Communications Électroniques).

³ Code of Defense, articles L.1111-2 and L.2141-3 respectively, drawn from articles 2 et 6 of the executive order n°59-147 of 7 January 1959 about the general organization of defense.

⁴ CPCE. Art. L.41: *"The prime minister defines [...] the radio frequencies or frequency bands that are allocated to state administrations."*

⁵ Under R20-44-11 §11 of the CPCE, the ANFR manages frequencies for professional mobile networks and the frequencies to be used temporarily.

13 November 2015. The Ministry of the Armed Forces needed, for Operation Sentinelle, to use radio communications that could be operational in an urban environment. This required using the frequencies of another competent authority. The Ministry turned directly toward ARCEP, which, given the exceptional circumstances, temporarily reassigned the frequencies. This assignment was not registered in the TNRBF; and the use of these frequencies was without consequence. For current means of communication, quickly reallocating frequency bands is urgent when a high risk exists of a terrorist attack on French soil.

For this reason, a decision by the prime minister, drafted in close collaboration with the ministries, administrations and regulatory authorities competent for managing radio frequencies, has enabled the ANFR to organize procedures for adopting a TNRBF containing the assignment of additional resources from the spectrum to the benefit of the ministries of the Interior and Armed Forces in case of threats (as defined in Article L.1111-2 of the Defense Code). After restating the ANFR's missions (Article 1), this decision specifies the tasks to be undertaken for preparing and validating modifications of the TNRBF (articles 2 and 3). Provision is made for a set of frequencies that may be reserved for law and order and state security, domestic and foreign. The modifications made to the TNRBF become effective only as of the declaration by the executive of one of the situations mentioned in Article L.1111-2 of the Defense Code.⁶ Despite its technical nature, this decision makes a positive contribution to the arrangements whereby state authorities respond to major crises.

⁶ Decision of 30 August 2018 in application of Article L.43 of the CPCE about the objectives of the ANFR in the circumstances foreseen by Article L.1111-2 of the Defense Code.