

Virtual Emergency Control Centers

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Abstract:- The COVID-19 pandemic has changed the way we live, work, and communicate. This has emphasized the importance of flexibility and resilience, forcing us to overcome business continuity challenges.

Digital transformation has played a key role in this, from remote meetings to employees working at home to virtually engaging with customers and business partners. COVID-19 has acted as an accelerator to an already accelerated change of pace in the digital realm. Another way it has changed the way we do business is in the way we plan and respond to emergencies.

Virtual Emergency Control Centers (VECC) move traditional ECCs into a digital environment where a variety of systems and collaborative tools can be deployed. Some of these tools are already enabled for remote access (video conferencing, telephony, and live stream), while others (such as radio) will take some time to be integrated into mobile phones and tablets for remote access. However, once that process is completed, the VECCs will enhance the efficiency of these centers while preserving their main functions.

I. INTRODUCTION

Through this paper, we will discuss how Information Technology can virtualize a traditional ECC by accommodating it with different virtual systems and collaboration tools to handle its operations more efficiently. Therefore, utilizing these technologies will enhance the performance of virtual systems from their counterparts, increase the efficiency of these centers and preserve the ECC's primary functions, including alerting, control, communications, coordination & documentation.

Virtual ECCs will give access to individuals from Executive Management, Incidents Commanders, and concerning elements to make the necessary communication & collaboration in case of emergency. These services include Video Conferencing, Live Streaming, Emergency Board Systems, Telephony, and Radio through their Mobiles, Tablet gadgets, and Workstations from any area inside or outside corporate premises. Besides, building a Virtual Emergency Control Center (VECC) will quickly react during crisis and calamity circumstances, guaranteeing business activities progression at the affected primary areas.

II. ECC PRIMARY FUNCTIONS

ECC is a conference room where members of Executive Management, Incidents Commanders, and concerning elements attend it during emergencies to tackle efficiently through the emergency preparedness process. This personnel carries out several primary functions through this ECC as the command, planning, operations, and documentation.

A. Alerting

Alerting is one of the primary functions of ECC, and once an incident occurs, concerning parties respond based on these incidents' levels. In response to this alert, Executive Management, Incidents Commanders, and a concerned entity will be contacted to attend the assigned ECC. The person on the site will send an alert through the ECC integrated device, and an authorized person will receive it.

B. Command

During an emergency or major incident, the officers responsible for immediate response shall meet at an agreed-upon location to command and control the situation. The officers will have dynamic communication and coordination to provide a centralized meeting, planning, and reporting committee. In response to the alert, the officers responsible for mitigating emergencies and experienced officials will join a video conference.

C. Operations

In the video conference, the officials will decide the best course of action to mitigate the disaster. Upon effort agreed with action items within the ECC committee, every officer manage the deployment of personnel and resources of disaster mitigation, preparedness, response, and recovery in the field. The officers will convey their messages and strategies to the disaster mitigation team through radio. All of the commands and operations will take place through the radio. As the situation during the incidents is continuously changing, response teams have to be connected with the ECC to cope with changes and action item updates.

D. Documentation

At the time of action, the ECC will make sure to log the data of each incident separately, and each log will be time stamped. The data will have alerts, messages, commands, operations, video, and audio feeds. Furthermore, this will allow future evaluation of what was achieved and what did not to define "lesson Learned" to enhance and develop policies and procedures.

III. VECC ESSENTIAL IT SERVICES

These are the services that the Virtual Emergency Control Center (VECC) will be providing:

A. Emergency Notification System:

This tool is one of the essential IT services in any ECC, which allows the organizations to push emergency notification during incidents and disasters to all concerned personnel to respond to the ECC. It can support the VECC once it is hosted on cloud service so authorized personnel can access it from anywhere and through any desktop or portable computing devices and mobiles. The user will send an alert or a message, and the authorized person will get a notification on the virtual emergency control system.

