SYST 542 Thought Question 6

These Use Cases are based on my Subway scenario posted on Web CT

Chemical Agent Incident Warning Use Case Use Case Name: Warning

Summary: The First Responder is traveling in a vehicle to respond to an emergency situation. The CBNAIR handheld located inside the vehicle in a mount emits an alert to the crew when the vehicle approaches the vicinity of the site. The First Responder takes the CBNAIR handheld and reacts to CBNAIR protection level and equipment configuration recommendations prior to entering the incident site.

Actor: First Responder (Any)

Preconditions: The Command Center receives a telephone call reporting indicators of a potential chemical agent incident. The data is input into the command center's CBNAIR system. The First Responder's CBNAIR system is mounted in the vehicle, operational, and in digital communication with the command center. The First Responder has been ordered to respond to the emergency situation at the site.

Description:

- 1. The CBNAIR mounted in the vehicle emits a visual and audible alarm after receiving communication of the potential chemical agent from the command center over the wireless WAN.
- 2. The First Responder secures the CBNAIR from the mount and acknowledges receipt of the warning by cueing the touch screen with finger or stylus.
- 3. The CBNAIR system then presents, in a checklist format, recommended actions for the First Responder to follow.
- 4. The First Responder then reacts to the recommendations, checks off completed actions by cueing the touch screen with finger or stylus. The First Responder dons the appropriate protection equipment (stopping the vehicle if necessary) and configures his equipment to optimally respond to a chemical agent. This may include steps such as turning on detectors, obtaining test kits and antidotes from storage bins, etc.
- 5. The CBNAIR automatically reports First Responder status and location as checklists are completed over the wireless WAN.
- 6. The CBNAIR system reports to the First Responder a receipt confirmation of the status report by the command center.
- 7. The First Responders proceed to the incident site.

Alternatives:

- The initial warning may be broadcast by a different First Responder already at the incident site instead of the command center.
- The First Responder may first receive the warning over the voice radio net. The First Responder would then manually cue the CBNAIR for the appropriate checklists and recommendations.
- The First Responder may acknowledge the warning or report status by voice radio if the wireless WAN network is not operational or within coverage range.
- If the First Responder does not have the appropriate protection equipment on board the vehicle, he would report this to the command center and then return to his station to obtain the equipment prior to going to the incident site.

Postconditions: The First Responder is wearing the appropriate protection gear and has configured his personal gear to optimally respond to a chemical agent incident prior to arriving at the incident site.

Identify Agent Use Case Use Case Name: Identify Agent

Summary: A First Responder (EMT) wearing protective clothing enters patient symptoms into CBNAIR while conducting triage of casualties by cueing the touch screen with stylus or pointer built into the finger of the protective glove. When sufficient symptoms are entered, the CBNAIR system responds with the identification of the chemical agents present, recommended treatment, recommended evacuation priorities, and automatically reports the identification to the command center and other CBNAIR handheld systems.

Actor: First Responder (EMT)

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Precondition: The First Responder is at the site of a potential chemical agent incident site in appropriate protective gear and with properly configured equipment for optimal response to a chemical agent. The CBNAIR handheld is operational and attached to the arm of the EMT conducting triage.

Description:

- 1. The First Responder (EMT) responsible for conducting triage of casualties while wearing protective clothing selects the input of casualty symptoms option of CBNAIR by cueing the touch screen with stylus or pointer built into the finger of the protective glove.
- 2. The CBNAIR handheld prompts the triage EMT to enter symptoms using guided questions.
- 3. The Triage EMT enters patient symptoms into the CBNAIR handheld.
- 4. The CBNAIR handheld automatically transmits the summary of a patient's symptoms the command center over the wireless LAN when the first responder finishes each examination.
- 5. The CBNAIR handheld continuously analyzes data input and when sufficient symptoms are entered, determines the identification of the chemical agents present.
- 6. The CBNAIR handheld automatically transmits the chemical agent ID and underlying data to the command center and other CBNAIR handheld systems.
- 7. The CBNAIR system reports confirmation of receipt by the command center of the agent ID.
- 8. The CBNAIR handheld recomputes recommended protection level, and if different, displays new protection level to EMT.
- 9. The CBNAIR handheld displays recommended treatments for casualties.
- 10. The CBNAIR handheld displays recommended evacuation priorities for casualties.

Alternatives:

- The command center by combining data from multiple first responders or other sources (automatic detectors) may make the first determination of chemical agent ID.
- The First Responder may broadcast the chemical agent ID by voice radio if the digital network is not operational or within coverage range.
- The First Responder may first receive agent ID over the voice radio net. The First Responder would then manually cue the CBNAIR for the appropriate checklists and recommendations.
- CBNAIR will indicate the combination of agents present, if multiple agents are present.

Note: First responders will enter individual patient symptoms into the CBNAIR handheld rather than a subjective assessment of whether the frequency of a symptom is widespread, present in some patients, or not present. The CBNAIR system will make the frequency determination based on the number of patient examinations completed from all first responders.

Postcondition: The CBNAIR handheld identified the chemical agents present and reported this identification to the command center and other First Responders. The CBNAIR handheld provided updated protection level recommendations for the First Responders, provided treatment recommendations, and provided triage treatment / evacuation priorities

Inputs

First Responder inputs will be menu selections on the handheld touch screen using fingertips, stylus, or pointer built into the protective glove. Handwriting recognition could be incorporated into the handheld if required for lengthy text input. With appropriate screen overlays, the use of a fingertip will not damage the screen. Although voice recognition was suggested in class, at the present the technology is not robust enough to be used in an outdoors environment with loud background noises that would be present such as sirens, helicopters, traffic, etc. Additionally, a protective mask greatly distorts voice communications making voice recognition almost impossible.

Command Center inputs will be via a desktop keyboard and mouse primarily using forms.

Outputs Displays

Displays

CBNAIR handheld displays will be forms and menu selections with check boxes and other yes/no option boxes on the touch screen. A heads up display was suggested in class, however, this would be impractical to use while wearing a protective mask and a screen would be much easier to see through the mask.

Command Center outputs will computer monitors and hard copy printouts.

Alarms and alerts.

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The CBNAIR vehicle mount has visual flashing light and audible alarms as part of the mount drawing vehicle power.

The CBNAIR handheld device also has an audible alarm and displays the actual alert in text on the screen.

Communications

The primary CBNAIR communications are through the wireless LAN. The backup communications system is the existing voice radio network.