

# Kirk samuda, kirk patrick, designing a hospital network



**ASSIGN  
BUSTER**

The fundamental characteristics of the Patton-Fuller Community Hospital network components, though operational do require an immediate upgrade to permit the changes forecasted. It's very important that I highlight the present information technology Infrastructure, with the Intent to analyze its components and capableness, and make recommendations for effective technological changes.

Patton-Fuller community Hospital's IT structure reflects a combination of seven efferent networks all built on the bus topology / architecture with a 1000 Base-T network structural backbone. To fully grasp and understand this structure, we must comprehend that there is both a logical and physical topology that is applied to this structure as displayed by the Diagram 1. 1 This top view diagram represents the hospital structure from an IT network perspective.

The Red outlined boxes are clinical areas, which include Errs and Ours, Pharmacy, Labs, Radiology, Dry Personal Offices, Wards, Outpatient Examining Rooms, and ICC. The Black outlined boxes are administrative functions, which include IT Department, Admitting/Delicacies, Facilities, HER, Hospital Senior Management, and Finance. Diagram 1. 0 – Showing the Hospital Structure from an IT perspective the hospital's structure from an Information Technology network perspective.

The diagram visually distinguishes between the hospital's clinical areas and its administrative functions. Diagram 1. 1 – showing the Hospital's Logical Network Infrastructure The backbone network structure for the entire hospital is 1000 Bases. Individual sections of departmental networks such as

Radiology use different standards such as 1000 Bases. The entire hospital has a complete power backup system with automatic cutover to a large diesel motor generator set. Individual departments have local UPS as depicted on the individual department network diagrams.

HAIFA is rigorously enforced. All patient data files are encrypted for storage using AES. All access to patient data files requires identification and authentication of each user. In all Radiology modalities the DISCO standard and PASS are standard. An evaluation of the current network topology shows clearly the bus topology being used many times. It is my opinion that based on the type of technological upgrades required, ample consideration should be given to using either the star or mesh topology for the hospital.

The standards applicable to this project details the importance of HAIFA and how their health insurance, portability and accountability act must be rigorously enforced. All patient data files must be encrypted and protected from intrusive software for storage using advanced Encryption Standards. The security of personal and medical information is of paramount importance and as such all users of the hospital network must be required to identification and authentication measures.

It's very important that the entire hospital's network be connected to a complete Backup system with automatic cutover to a larger diesel motor generator set. All individual departments have local UPS attached to their departments. A self assessment of my work against the Peer Evaluation Rating Scale using the Part 1 tab, would find my inquisition and

recommendations to the hospital, to be highly effective. As such, I should be assigned the highest grade for outstanding work.