Individual Design Exercise Coursework

Introduction: Individual Design Exercise Coursework

The ambulance is the most important thing for health care services. To deliver and discharge the patient and keen service to the system of emergency and rushing to the hospitals, Ambulance is the primary thing that a health care personnel is needed. All the system of health care, the preliminary response of the paramedic, and sometimes the doctors need to move fast to some accident places. An ambulance is a health service vehicle that needs to sustain all the minimum equipment of life support equipment designated ambulance is spread all over the world for quality time management of health services and services to the people and there are lots of new needs for providing a new type of systematics things that can sustain and deliver the more and more needing person in the stipulated time. There are lots of new needs and innovation because the weather condition and the distance and topography is not the same at every place. From the far end of any valley, if any kind of patient needs any kind of emergency supposed to be rushed to the hospital then that particular patient needs to avail ambulance. That is necessary to take an air ambulance. Or if any valley people need to avail the hospital that patient needs to check the doctor so that patient needs a marine ambulance. In this study, an innovative design of a marine ambulance needed to be assigned. The term innovative design means a new and fresh idea of creation that will have the possibility of implementation in a certain project. Maybe new and innovative designs become a landmark of the creative system. Various Software and design analysis software is needed to create the system. Also, this study may indicate that such type of study

Discussion

In this assignment an ambulance delivery system needed to be designed with an innovative technique, To imply the system in the British isle complies with more than 6000 isles to deliver and connect various types of patients to the valley (Hargitayanti et al 2021). The design should be in such a manner that it will sustain the system for a long time, and there is a system of implementation of various types of attendants and a fast-moving delivery system with an additional life-supporting system.

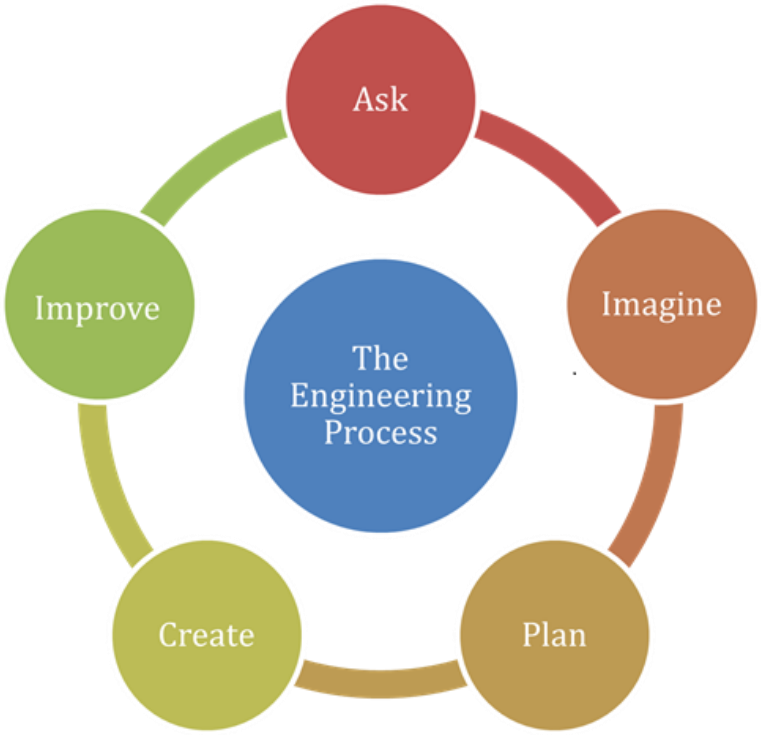

Figure 1: Engineering process

There are lots of things that need to cover in the system of emergency. There are lots of systems that have the mobility to rush hour. There are lots of systems that need to be implied in the ambulance. As told before there are lots of life-supporting systems that are necessary for this. There is a lot of potentiality of the system boat in a particular way as it can run through water.

Design theory and conceptualization

A boat or yacht is a marine system of transport and there are plenty of designs that can be implemented in the system. There are a lot of data and a calculation is needed in the system. The general curvature of the deck, the wind control system and the machinery need to be designed well. Also, the mechanical machinery needs to be checked and there is a need for proper implementation of the system (Johnson et al 2020).

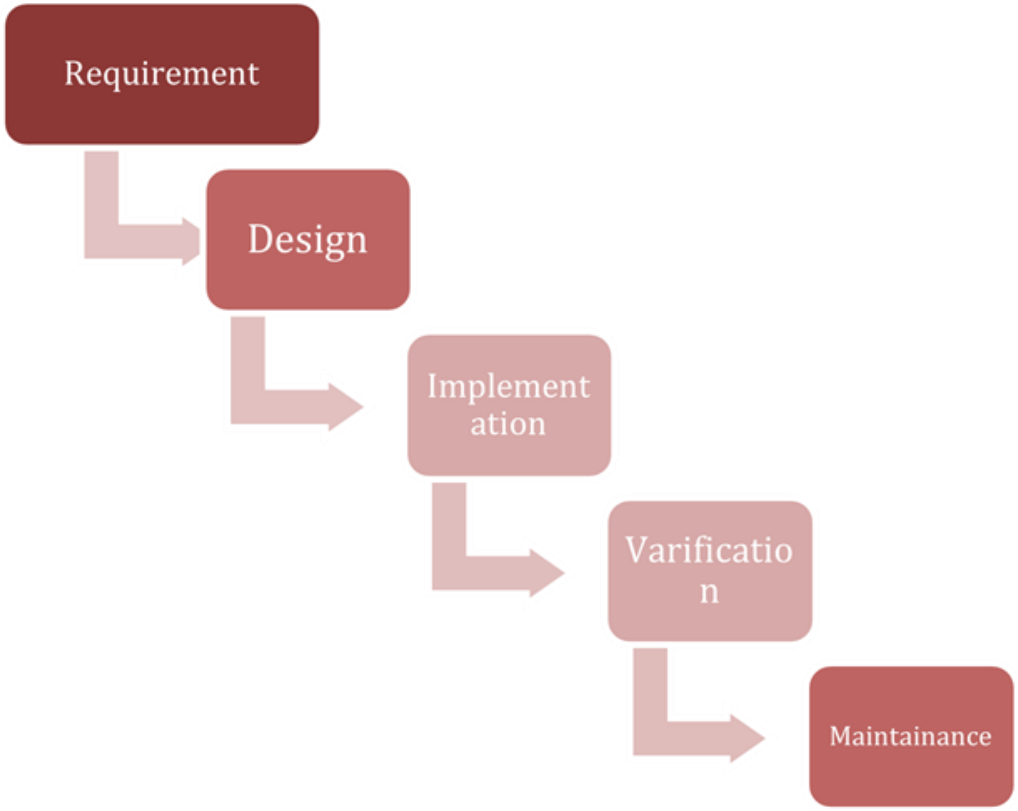

Figure 2: Engineering Implementation

There are some systems need to consider that is

- The shape of the ship: shape and design of the ship are one of the basic things that need to consider for plans. A boat needs to implement such a geometrical design that it could resist aqua pressure and the stipulated self-weight. And in this case, it needs to imply the suitable provision of the health management system.
- Control system and machinery: The control system should be an easy one according to the demand. When the case is a patient delivering its needs to hurry (BEKgöz et al 2019). And needs to create an easy and handy controlling system.

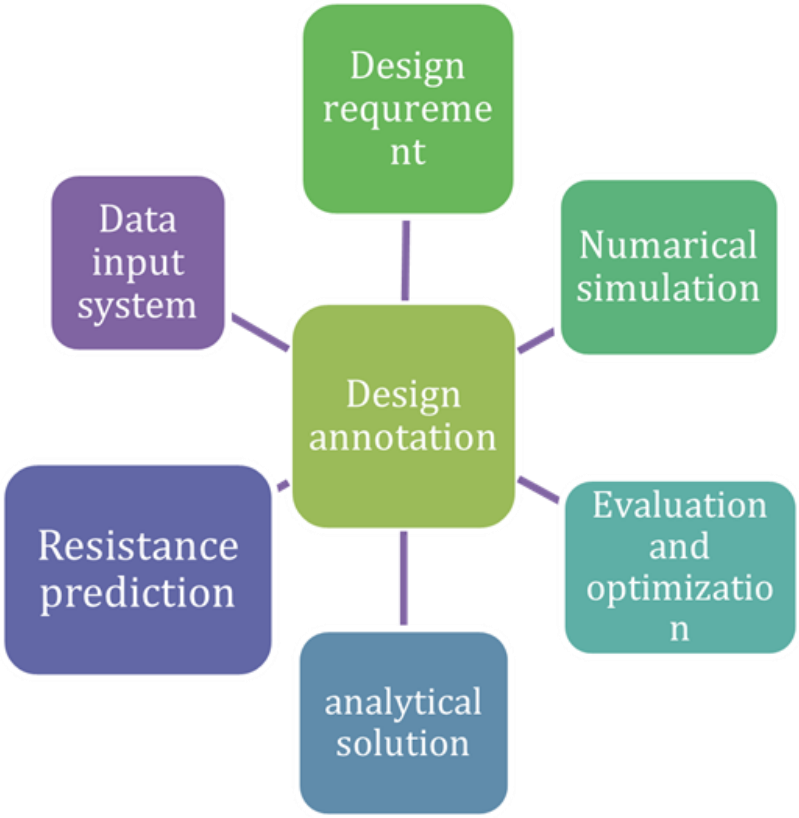

Figure 3: Design annotation system

With the stipulated machinery there is a system of combination in the system maintenance, also there are need to create a proper maintenance system.

- Safety options: As an ambulance is needed to be designed, the proper concept of safety and secureness is also needed in the process. The main consideration is to safely handle the patient and their belongings and also don't make any obstacles during the life support system. Also during the fast ride, there should not be any kind of harm to medical attendance and their support.
- Smooth transition: Smooth transition of the patient is the most necessary thing that is good for the patient medical response. Using particular handy types of equipment like portable nebulizers, and stretchers is necessary for this system (Atabiq et al 2022). As often there are problems with short breathing, chest pain, major or minor accident, or in the case of pregnancy.

Design Implementation

Plan

The creative design of the boat will be created after checking some issues like aquatic pressure, balancing the entire structure, inner storage compound, and the defects of materials.

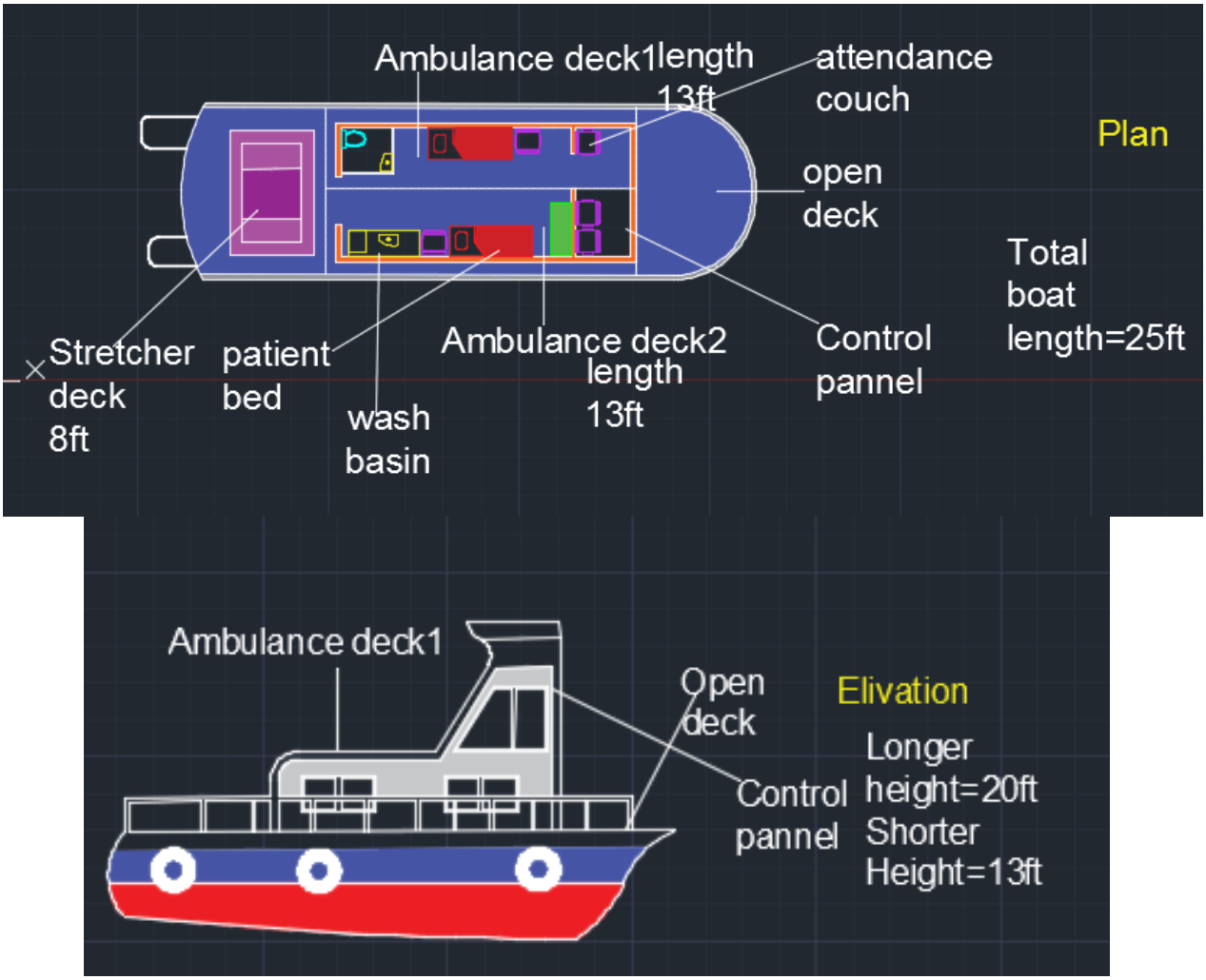

Figure 4: Plan and elevation of the design

To consider the aquatic pressure and wind pressure the particular model needs to simulate the various models of wind and air pressure (Windy 2022). After calculating the zone of affection then the shape may be designed with the help of the calculative data on the particular zone. In this design, The boat is 25ft in length and has an ambulance deck of 13 ft,(the breadth of the boat will consider according to demand) height is considered a longer height of 20ft, and from the shorter side its 13 ft (Dielemans 2021). There are plenty of provisions of space for the stretcher deck and the option of spacing of open deck. The Control panel should be implemented according to the system of machinery that will be used in the

boat and the control should be useful and handy in nature and there should be easy access of the system the outer side of the boat should be colored red and white and there should be plenty of space for signs. And the system in the maintenance is good for the idealization of the project. Various types of engineering aspects and knowledge can be implemented in the system.

Ambulance spaces and other life-saving equipment: There should be plenty of provisions that a stretcher should be easily implemented in the popper deck. There could be a system of implementation of short cranes and different types of delivery material. The design should be implemented in such a way that there should be proper handling of sick people and smooth delivery in the hospitals by the emergency response personnel, In this design, the length of the ambulance deck is 13 ft, also there are lots of provisions of the bathroom and different type of essential medical equipment (Pusaka et al 2020). Also, there should be plenty of space of providing attendance space. It's been considered that many patients could have needed constant attention and response for saving their life. Various types of life-saving equipment like nebulizers have plenty amount of oxygen.

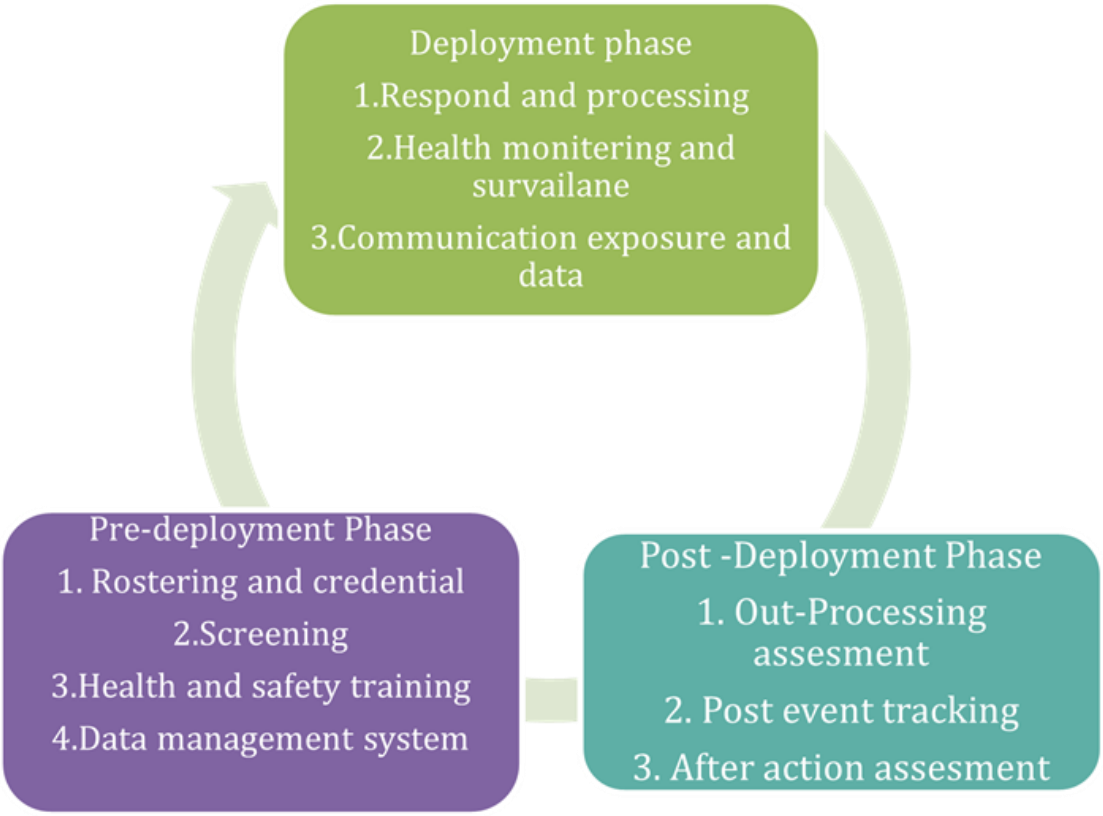

Figure 5: Health and Ambulance Management System

Various kinds of instant life-saving medicines, and many more. Every ambulance need to equip a nurse two medical attendant and an ambulance pilot also there should be plenty of the provision of equipment space. Every ambulance needed to paste a water siren with brightly colored lights and signs also every ambulance needs to paste the emergency number in the system (Al-Hakim et al 2021). There are some medical guidelines about transporting and transforming certain types of patients and that should be followed as per the recommendation. There are some types of equipment that can comfort patients during transportation.

As a recommendation, there should not be the usage of portable stretchers that is weighing more than 15 kg (Abdeen et al 2022). As the moving of the patient needs to be more dignified the system of transportation needs to be created as per the demand. As the ambulance needs to be in various isles ambulance must be very fast in mobility and must create lots of informatics and lots of caring systems. All the remaining systems must be followed as guidelines.

Conclusion:

As has been seen that there is a lot of potential in the design and there is a lot of scope at the system and there would be likely implemented in the system and there should be in knowledge depth and there would be a clear advanced system of implementation. As there is an increment of medical facilities, there are more systems that should be implied in the system. Medical facilities and systems are increasing in the system creasing kind of ambulance system need to imply a proper system. As there are new emerging numbers of land that are living people consuming the medical facilities also need to increase, so the air ambulance also needs to imply and there needs to marine ambulance also needs to imply. In the process, more medical personnel with experience need to set and finely designed ambulance design needs to comply. In this project, an overview of design is implied. The stipulated space and formation system is needed in the creation of a certain type of project. A combination of engineering sturdy with deeper analysis and information of demand matching is the key to the particular support. In this system, there should be more precise concept needed for implementation.

Reference

Journal

Abdeen, M.A., Ahmed, M.H., Seliem, H., Sheltami, T.R., Alghamdi, T.M. and El-Nainay, M., 2022. A Novel Smart Ambulance System—Algorithm Design, Modeling, and Performance Analysis. IEEE Access, 10, pp.42656-42672.

Al Hakim, R.R., Sidiq, M.H., Pangestu, A., Jaenul, A., Arief, Y.Z., Purnawan, H., Aji, R. and Riyadi, S., 2021. DESIGN AND DEVELOPMENT SMART-IMBULANCE FOR EFFICIENCY OF ROAD EMERGENCY PRIORITIES. Journal of Innovation Research and Knowledge, 1(2), pp.167-172.

Atabiq, F., Putra, I.Z., Gozali, M.S., Budiarto, A.W., Nurhidayat, M., Kartika, K., Wibowo, A., Ariyanto, N.P., Arifin, N.L., Siregar, J. and Rossbandrio, W., 2022. Perawatan dan Perbaikan Dalam Upaya Peremajaan Kapal Batam Marine Ambulance. Jurnal Pengabdian kepada Masyarakat Politeknik Negeri Batam, 4(1), pp.59-69.

BEKgöz, B., ?shak, ?.A.N. and Türkdemir, A.H., 2019. A comparison of traumatic arrest cases intervened by Ankara Provincial Ambulance Service teams in the years 2017 and 2018. Medical Journal of Islamic World Academy of Sciences, 27(3), pp.85-92.

Dielemans, J., 2021. Ambulance drones in The Netherlands: a vision+ concept design for 2035.

Hargitayanti, H., Akmal, M. and Hasniati, H., 2022, January. Performance of Health Service on Home Care and Marine Ambulance Telemedicine in The City of Makassar. In 2nd International Conference on Social Science, Humanities, Education and Society Development (ICONS 2021) (pp. 230-233). Atlantis Press.

Hargitayanti, H., Ibrahim, M.A. and Hasniati, H., 2021. Performance Services of Home Care-Based Health and Marine Ambulance Telemedicine in Makassar City (Case Study of Health Service Performance Based on Home Care and Marine Ambulance Telemedicine on Barrang Lompo Island, Makassar City). Enrichment: Journal of Management, 12(1), pp.888-893

Johnson, S. and Yu, D., 2020. From flooding to finance: NHS ambulance?assisted evacuations of care home residents in Norfolk and Suffolk, UK. Journal of Flood Risk Management, 13(1), p.e12592.

Pusaka, A., Dewanto, Y.A. and Octaviany, F., 2020, February. Study of ambulance ship design for island services in Indonesia. In Journal of Physics: Conference Series (Vol. 1469, No. 1, p. 012139). IOP Publishing.

Winaldy, R., 2022. KINERJA PELAYANAN KESEHATAN BERBASIS HOME CARE DAN TELEMEDICINE AMBULANCE LAUT DI KOTA MAKASSAR= PERFORMANCE OF

HEALTH SERVICES BASED ON HOME CARE AND MARINE TELEMEDICINE AMBULANCE IN MAKASSAR CITY (Doctoral dissertation, Universitas Hasanuddin).