



The College of Graduate Studies and the College of Information Technology Cordially Invite
You to a

(Master Thesis Defense)

Entitled

Assimilating Requirements Specification for Space Manned Missions: A Novel Approach

by

(Khalfan Mohamed Al Remeithi)

Faculty Advisor

(Dr. Sofia Ouhbi)

College of Information Technology

Date & Venue

9th of June, 2021

03:00 PM

Room , E1 Building

Abstract

Aligned with the UAE Space Strategy 2117, which aims to establish the first inhabitable human on the Martian Surface by 2117, and with the current enthuse toward space tourism, we propose a novel Framework to assimilate the process of requirement specification for a Manned Mission to Mars surface. Deep Space manned missions are unique and characterized with a set of specific requirements that should be elicited from different sources and stakeholders to ensure the missions' success. In addition, these missions are highly dependent on the software components in the command and data handling system (CDHS), which is used to control the spacecraft and interact with the astronauts. Our contribution consists of: (i) surveying current trends in space system requirements engineering from requirements elicitation to requirements specification; and (ii) introducing a new set of requirements for CDHS in space missions that are related to astronauts, particularly emotional requirements for deep space manned missions, which to the best of our knowledge have not been considered before. Moreover, our contribution introduces a modular requirement model to ensure the modularity and reusability of these requirements in several manned space missions. We do believe that this contribution will strengthen the position of UAE as one of the top countries in the world that invest in space sciences.

Keywords:

Requirements Engineering, Requirements Specification, Space Mission Requirements, Emotional Requirements