Kingdom of Bahrain, Agenda Item 4

Committee on the Peaceful Use of Outer Space (COPUOS)

63rd session of the Legal Subcommittee 15-26 April 2024

Honorable Chair, Distinguished Delegates,

Firstly, I would like to congratulate Mr. Santiago Ripol Carulla on his newly appointed position as chair of the committee as I would also like to express my gratitude to Ms. Aarti Holla-Maini, the Director of the Office as well as the commendable staff of the office for their preparation of the meetings and continuous support and assistance.

Honorable Chair, Distinguished Delegates,

Since our Membership in 2017 the Kingdom of Bahrain has been committed to the principles set out by COPUOS on the governance and use of space for the benefit of all humanity for peace security and development.

As an emerging space nation it is with great pleasure that we are able to announce to the international space community the achievements that the Kingdom of Bahrain has managed to accomplish since the establishment of the National Space Science Agency in 2014, the Kingdom has committed to enabling the vision of His Majesty King Hamad bin Isa Al Khalifa to raise Bahrain's aspirations beyond earth and to ensure that Bahrain ranks shoulder to shoulder with advanced countries in the field of space science. Within these few years we have managed to "hit the ground running" by building national capacity, as well as being actively engaged in research and development to devise innovative solutions aimed at preserving a safe environment in outer space to maintain the future of space exploration. The Legal Subcommittee has played an essential role in affirming the importance of space sustainability and space debris mitigation, and Bahrain has shown commitment in these efforts by developing methods to overcome sustainability challenges and we have two worth mentioning, first, is the development of an onboard AI-based space debris detection and size classification system which can be utilized by ground processing to calculate all orbital parameters of the space debris and predict its motion and associated risk. This proposed system showed promising

results contributing to global efforts in tracking space debris and collision avoidance. Our second method focuses on efforts in the detection and classification of space debris using radar detection data for an optimized low complexity and low-cost system. An AI, deep learning model was developed using a deep neural network for target detection and classification of real-time space debris. The system was shown to distinguish and classify objects adequately since the model followed an architecture of target list, classification, data labelling and filtering. The model developed can be integrated into numerous payload sensors and other radar gadgets that will aid in space debris monitoring and collision avoidance, and the long-term sustainability of outer space activities.

The Kingdom of Bahrain recognizes the importance to have various initiatives and projects dedicated to the conservation of space and the reduction of space debris for the benefit of future generations and will continue to further its research and development to promote the responsible and sustainable use of space for all.

In addition, The Kingdom of Bahrain recognizes the importance of developing an internal legal regime and we are well on our way to passing our National Space law which is comprehensive and reaffirms the principles set out in the Outer Space Treaty, it is bound to regulate licensing supervision and authority as well as ensure that space sustainability is of top priority as it will obligate licensees to comply with space debris mitigation measures while performing any activity that may involve interaction with the space environment.

To conclude Bahrain is of a thorough conviction that the preservation of the outer space environment would not be possible without unified international efforts which is why Bahrain is and will always be committed to actively supporting global initiatives focused on ensuring the future of space exploration.

Thank you, Honorable Chair.