A human rights-based approach to Space Traffic Management

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The international implementation of space traffic management measures, aligned with human rights values and principles, must be prioritized to improve the safety and sustainability of human activities in outer space. Recognizing the growing commercialization and democratization of outer space, the growing relevance of Space4All as a global agenda advocates for the promotion of a diverse, inclusive, and sustainable minded approach to international space policy making. The creation of STM measures, mindful of human rights, provides the most appropriate means to promote safety and sustainability, and to best-balance between the challenges of over versus under-regulation.

The prevailing definition of space traffic management (STM) is that of technical and regulatory provisions promoting: A) safe access to outer space; B) the conducting of operations in outer space; and C) the return of space objects from outer space, free from external interference. Accordingly, the continuing absence of a definitive STM system or framework across internationals space law (ISL) agreements presents a significant danger to future space development. Herein the absence of consensus on the standards governing the launching and operation of space-based assets has created an environment adverse to sustainable development.

Human rights represent universal, inherent, and indivisible rights possessed by all individuals by virtue of their existence as human beings – regardless of sex, ethnicity, religion, or any other status. States possess the ongoing obligation to respect, protect, and fulfil the human rights of their citizens under international law. The utility of human rights is centered upon the health, dignity, and well-being of the individual, providing for fundamental rights and freedoms considered essential to the individual's ability to achieve to life, liberty, and the pursuit of happiness.

The basis for State compliance with International Human Rights Law (IHRL) within ISL jurisprudence is provided under Article 1 of the UN Charter, while the extraterritorial applicability of IHRL is provided under Article III of the 1967 Outer Space Treaty (OST) – where activities conducted by State parties must be carried out "in accordance with international law, including the [UN Charter]". States are therefore challenged to establish precedent and outline what manner of IHRL is relevant and applicable in the outer space context. Further, States are compelled to act responsibly in outer space under Article IV of the OST – bearing "international responsibility" for the actions of their private entities in outer space.

Consequently, the developing intersection between IHRL and space affairs presents unique opportunities for the international community to manage STM and its associated issues (i.e. space debris, light pollution) from a human rights-based approach (HRBA). The promotion of a HRBA across scientific, exploratory, and general human spaceflight activities bears relevance for promoting and protecting human rights within STM systems. HRBA is outlined within the 2003 UN Development group's Common Understanding document – providing a consistent approach to common programming processes at the global, regional, and national level. This mandates that:

1) All programs concerning development cooperation and technical assistance should prioritize the realization of human rights;
2) That human rights instruments should guide development cooperation and programming;
3) That development cooperation should contribute to duty bearer's capacity to meet obligations of rights-holders.

The utility of human rights lies in its broadly endorsed normative and legal framework which sets minimum standards for governance, and clarifies the rights and duties of States and rights holders. Consequently, the guidelines and restrictions surrounding STM systems/frameworks must advance a political and policy environment conducive to ensuring the human rights of a State's citizens – managing the commercial use of space-based technologies versus its potential for rights enforcement.

The application of a human rights-based approach to STM systems/frameworks provides the impetus for States to act responsibly and collectively regulate the outer space environment for common benefit. This pertains to the environmental risks and sustainability issues associated with the increasing degree of debris and traffic in space – encompassing individual safety, freedom of navigation, and environmental pollution. Such issues within STM may be addressed by States adhering to their obligation to respect, protect, and fulfil human rights across several key areas.

Firstly, the Right to Life (RTL) – providing that every human being has the inherent right to life, that this right shall be protected at law, and that no one shall be arbitrarily deprived of their life. This has been interpreted as requiring governments to take appropriate measures to safeguard life under law, and proactively protecting the lives of those at risk. The European Convention on Human Rights further outlines the duty of states to take appropriate steps to safeguard lives by: A) establishing a legal framework; and B) addressing life-threatening environmental risks. Any devised STM system/framework must therefore uphold the safety and sanctity of human life as its foremost concern, and integrate proactive measures to protect human life and avoid harms.

Second, the Right to a Healthy Environment (RHE) – adopting a human-centric approach to environmental issues, recognising that without a healthy environment "we are unable to fulfil our aspirations or even live at a level commensurate with minimum standards of human dignity." IHRL has recognized that RHE represents a key element in enabling people to lead a healthy life. Any devised STM system/framework must therefore discourage or prohibit measures which cause such damage to the space environment, which may prejudice the health and survival of human spaceflight participants.

Third, the Right to participate in Cultural Life (RCL) – guaranteeing the right of everyone to access, participate in and enjoy culture, cultural heritage, and cultural expressions. This encompasses the right of peoples to enjoy their own culture, to take part in cultural life, and enjoy the benefit of scientific progress. Any devised STM system/framework must therefore integrate concerns relating to space debris, considered as either historical artefacts or as tied into a culture's heritage. Further, the developing right to dark and quiet skies as a cultural right may impact upon the volume of traffic and orbital route of space-based assets.

Noting the universal, inherent, and indivisible nature of human rights, the application of HRBA to STM facilitates numerous benefits conducive to the development of a safe and sustainable outer space environment. This includes ensuring that people have their basic needs met; that vulnerable groups are protected; maintaining the rule of law; the promotion of environmentally responsible practices; and holding governments accountable to their international obligation to respect, protect, and fulfil human rights. It is therefore envisioned that the integration of a HRBA in the formation and international implementation of STM systems/frameworks will prove conducive to the evolving and exponential pace of human activities across the final frontier.