

# TruSat Charter

Epoch 1.0

## Overview and Definitions

TruSat is an open source, citizen-powered system for creating a trusted record of satellite orbits in service of the long-term sustainability of outer space activities. This **TruSat System** comprises two main elements: **Satellite Observers**, who make and report satellite observations, and **TruSat Software** that autonomously processes observations of a satellite from multiple points around Earth into an orbit prediction and confidence assessment of that prediction. **Space Sustainability Advocates**<sup>1</sup> may task the TruSat System to observe satellites of interest for sustainability purposes,<sup>2</sup> and utilize the resulting data.

The TruSat System is developed and maintained by the **TruSat Open Source Community**. In addition to developing the TruSat Software, this global community of **Contributors** provide valuable input on feature roadmaps, author documentation and other content that enable participation by a diverse range of Contributors, and translate them into multiple languages.

The **TruSat Charter** specifies the governance arrangements for the TruSat System and Open Source Community. The Charter will be regularly revised to meet the governance needs of the Community and to give effect to the Principles enumerated in Section 1. Each version of the Charter is identified by an Epoch: a period measured in time or milestones in which that version is in effect. At the conclusion of an Epoch, the Charter will be revised in accordance with the procedures it specifies. Epoch 1 will remain in effect until the release of version 0.2 of the TruSat Software, at which point the Charter will be revised for Epoch 2. As specified in Section 3, the Epoch 2 revisions will specify transparent processes for tasking the TruSat System—functionality to be introduced in the v0.2 release—and a more detailed governance framework for open source software development.

Governance of the TruSat Community will be progressively decentralized, as specified in Section 1. Epochs 1 and 2 are experimental “incubation” periods for both the Software and the Community. The v0.1 release of the Software was developed by ConsenSys Space, which is also developing v0.2. Beginning in Epoch 2, Open Source Community contributions will be integral to building out the Software Roadmap. Whereas Community governance will initially be based upon a “benevolent leader” model—in which ConsenSys Space makes decisions in consultation

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<sup>1</sup> Space Sustainability Advocates are Individuals and institutions developing standards for sustainable orbital operations and assessing orbital operations against such standards.

<sup>2</sup> “Sustainability purposes” will be defined, for purposes of this Charter, in the Epoch 2 package of amendments. See Section 3.A.1.

with the TruSat Partners—the governance model will progressively evolve toward a “meritocratic model” in step with the growth of Community contributions to the software.<sup>3</sup>

## Section 1: TruSat Guiding Principles

- A. Space Sustainability Mission: TruSat exists to promote the long-term sustainability of outer space activities. At present, this takes the form of creating a trusted record of satellite orbits suitable for assessing satellite operations against emerging best practices and standards for responsible orbital operations.
- B. Openness: TruSat is an open-sensor system in that any person or entity may contribute satellite observation data without permission. The resulting orbital position data is publicly available and freely accessible without restriction.
- C. Transparency: The TruSat System is transparent in that the algorithms for processing satellite observations into an orbit prediction are freely accessible (e.g., source code in the TruSat software repos, narrative explanation in White Paper). TruSat Community governance will remain transparent by publishing the governance arrangements in effect in the TruSat Charter, accessible at TruSat.org.
- D. Open Source licensing: The TruSat Software is made available under open source licenses.<sup>4</sup> All Contributions must be compliant with the applicable open source license.
- E. Democratizing and Diversifying Space Endeavors: Creating new opportunities for global public participation in space endeavors, and reducing barriers to participation.
- F. Progressive decentralization of the TruSat System: With migration to Ethereum mainnet and implementation of Web3 governance functionality, and the development of TruSat’s community of contributors, governance of the TruSat System will progressively be decentralized. The TruSat Partners intend that their roles in System governance will be phased out in favor of direct governance by TruSat Contributors.
- G. Progressive Decentralization of Community Governance: Governance of the TruSat Open Source Community will progressively transition from a “benevolent leader”<sup>5</sup> model in Epochs 1 and 2, in which ConsenSys Space makes decisions in consultation with the TruSat Partners, to a “meritocratic”<sup>6</sup> model, in step with growth in Community contributions.

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<sup>3</sup> For descriptions of the “benevolent dictator” and “meritocratic” models for open source governance, see OSS Watch, Governance, <http://oss-watch.ac.uk/resources/governancemodels>.

<sup>4</sup> The open source license(s) applicable to each component of the TruSat software will be specified in the Epoch 2 Charter amendments. The version 0.1 release has been licensed under the APACHE V2.0 license. <https://www.apache.org/licenses/LICENSE-2.0>

<sup>5</sup> See OSS Watch, Benevolent Dictator Model, <http://oss-watch.ac.uk/resources/benevolentdictatorgovernancemodel>

<sup>6</sup> See OSS Watch, Meritocratic Model, <http://oss-watch.ac.uk/resources/meritocraticgovernancemodel>

## **Section 2: TruSat Partners**

- A. The TruSat Partners are leaders in space sustainability and/or creating opportunities for involvement in space endeavors. The following Partners are committed to implementing the Principles set forth in Section 1, and maintaining and advancing TruSat as a space sustainability tool as set forth in this Section 3:
  - 1. ConsenSys Space
  - 2. Secure World Foundation
  - 3. Professor Moriba Jah, University of Texas at Austin
  - 4. Society of Women in Space Exploration (SWISE)
  
- B. The TruSat Partners commit to maintaining and advancing the TruSat System and building the Open Source Community as follows:
  - 1. Building the Open Source Community by introducing TruSat to potential Contributors.
  - 2. Serving as liaisons with Contributor and User communities, representing their interests and feedback in the feature development process.
  - 3. Ensuring TruSat's alignment with the needs of Space Sustainability Advocates, and that TruSat's capabilities are accounted for in the development of space sustainability standards.
  - 4. Partners may, in their discretion, sponsor initiatives to build the TruSat Software and Community, such as hackathons, bounties, and grants of observing hardware.
  
- C. In Epoch 1, ConsenSys Space exercises decision authority with respect to the TruSat Software in consultation with the TruSat Partners.
  
- D. Individuals and institutions wishing to undertake the commitments of TruSat Partners and help to implement the Principles of Section 1, may be accepted as a TruSat Partner by consensus of the existing Partners.


## **Section 3: Process and Timeline for Epoch 2 Amendments**

- A. The Partners intend to adopt an Epoch 2 package of amendments to the Charter in connection with the release of version 0.2 of the TruSat Software. The Epoch 2 amendments are expected to add the following to the Charter:
  - 1. Specify a transparent process for tasking the TruSat System in Epoch 2. The v0.2 release is expected to add Missions: functionality enabling space sustainability advocates to request data on specified satellites for sustainability purposes. The Epoch 2 Charter amendments will specify a process for this tasking function, including a definition of the "sustainability purposes" for which the system may be tasked.

2. Specify a detailed open source governance framework for Epoch 2. The partners foresee this framework will be based upon a “benevolent leader” model in Epoch 2, in which ConsenSys Space will exercise ultimate decision authority in consultation with the TruSat Partners, on the way to a “meritocratic” governance model in future Epochs.
  3. Specify the open source license(s) under which each component of the TruSat Software will be licensed, and with which all contributions must be compliant.
- B. This Charter may be amended by a consensus of the TruSat Partners.

As a symbol of their commitment to the TruSat Guiding Principles, and maintaining and advancing TruSat as a tool for the long-term sustainability of outer space activities, the undersigned Partners have endorsed this Charter.

For ConsenSys Space



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Joseph Lubin

Oct 21, 2019

Date:

For Secure World Foundation




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Dr. Peter Martinez

21/10/2019

Date:

For the University of Texas at Austin



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Professor Moriba Jah

Oct 22, 2019

Date:

For Society of Women in Space Exploration



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Bianca Vasquez

Date: Oct 21, 2019