Independent Impact Protocol

Table of Contents

Introduction

Independent Impact is a platform for transparently reporting and quantifying all conceivable anthropogenic impact on natural and social environments. The platform is intended to be a non-prescriptive, decentralised, Web3 alternative to the traditional, institutionalised registries and standards bodies that have been overseeing similar activities (especially carbon offset activities in the voluntary carbon market) over the past few decades. It also intends to usher in a new class of standards, activities and tokenised assets for which there is currently no non-web3 alternative.

This document details the Independent Impact Protocol that governs the platform. The first section of this document gives an overview of the concepts and terminology used on the platform. The second section of the document lays out the principles that underpin the protocol. The Agent Reputation System is described in the third section, the Impact Scoring System is detailed in the fourth section. More information on the other scoring systems in operation on the platform is provided in the fifth section. The sixth, seventh and eighth sections deal with bounties, voting and commenting respectively. The anti-gaming mechanisms employed on the platform are detailed in the ninth section. The final section describes the technical implementation of the protocol on the platform.

Overview of concepts and terminology

The platform's vocabulary and worldview are thoroughly informed by the Anthropogenic Impact Accounting (AIA) suite of ontologies[1]. The suite consists of four ontologies, namely:

(a) The Impact Ontology.[2] This ontology defines the core concepts for understanding "impact" in general. It describes terms such as "event", "state" and "indicator" and explains how they relate to one another.
(b) The Claim Ontology[3], which lays the foundation for understanding and describing claims, i.e., statements about things, and their substantiation.
(c) The Information Communication Ontology[4], which provides a rudimentary framework for understanding how information (such as a report about an event) is communicated.
(d) The Anthropogenic Impact Accounting Ontology[5] (AIAO), which is the highest-level ontology of the suite. AIAO draws upon and extends concepts from the Impact Ontology, the Claim Ontology and the Information Communication Ontology to provide the framework for describing and understanding how humankind's activities impact our world.

The premise of AIAO is:

"An *agent* engages in an *activity* that impacts a *state*."[6]

"Agent" is defined in AIAO as "[a] thing that bears some form of accountability for the occurrence of another thing."[7] In other words, an agent is any entity that can be held legally accountable for the impact that they have on others and on their environment. The concept of an agent is not restricted to natural individuals – an agent can, for example, also be a legal entity, such as a company, or a group of individuals working as a team.

"Activity" is defined as "[a]n event that is orchestrated by an agent,"[8] whereas "event" is defined in the Impact Ontology as "[a] change in the state of a [thing]."[9] "Thing" here can be literally anything, but the kinds of things that Independent Impact is particularly interested in are those "things" that can be considered "environments" – natural and social environments alike, e.g., the Nile Delta or the community of Pembroke. Examples of activities include vehicle manufacturing, the transportation of goods or restoring a wetland.

Finally, "state" is defined as "[t]he condition of a *thing* at a specific point in time, expressed in terms of one or more *indicator*-value pairs."[10] Firstly, the *things* we are interested in in the context of Independent Impact are, as explained earlier, those things that can be considered "environments". Secondly, "indicator" here means conventions or standards such as "the mass of a body, measured in kilogramme," or "the height of a tree, measured in metre." In the

[1] Developed by the Standards Working Group of the Linux Foundation Decentralised Trust's Climate Action and Accounting Special Interest Group. See XXX for details.
[2] https://aiaont.github.io/impactont/impactont.html
[3] https://aiaont.github.io/claimont/claimont.html
[4] https://aiaont.github.io/infocomm/infocomm.html
[5] https://aiaont.github.io/aiao/aiao.html
[6] Ibid.
[7] Ibid.
[8] Ibid.
[9] https://aiaont.github.io/impactont/impactont.html
[10] Ibid.

context of Independent Impact we are typically interested in conventions that are used to describe how healthy or unhealthy an environment is.

Differences in the state of an environment are how we measure and express "impact". Elaborate.

These concepts and terms form the basis of the Independent Impact paradigm. The rest of this document shall use the terms as they are described above. Readers are encouraged to peruse the AIA suite of ontologies to enhance their understanding of these and related concepts.

Other concepts and terms that deserve introduction already here are:

Bounties – TODO.

Reputation – TODO.

Validation – TODO.

Verification – TODO.

CR – TODO.

Some final remarks on terminology:

(a) In this document the term "action" refers to a thing that a user can do on the digital Independent Impact platform, e.g., reviewing some information or publishing an impact claim; the term "activity" should be understood as defined in AIA, i.e., an activity undertaken by an agent in some real-world environment to effect some specific, beneficial impact in that environment (a reforestation activity, for example).
(b) In this document the term "activity" also implies "project" and vice versa, unless explicitly stated otherwise. This is purely for conciseness. A project is, as per AIAO, really a collection of activities that are executed to collectively achieve some specific goal.[11]
(c) To "own" an activity means to be primarily responsible for the occurrence thereof, and therefore primarily responsible for its impact.
(d) All users of the Independent Impact platform are considered agents, even if they never own real-world impact activities. Readers of this document can therefore consider the terms "user(s)" and "agent(s)" as interchangeable, except for where they are explicitly distinguished.

[11] https://aiaont.github.io/aiao/aiao.html#cls--Project

Principles

The Independent Impact Protocol is informed by four sets of principles – general principles, impact principles, accounting principles and reporting principles. Each set of principles is discussed below.

General principles

1. **Openness.** Everyone should be able to / be empowered to contribute to common goals for good. Engaging in climate action or biodiversity conservation should not be something reserved for large companies with large "ESG" budgets and/or compliance regulations to meet. Smaller companies, organisations and individual citizens, with good intention, knowledge and skills, should be empowered to contribute in their respective capacities to humankind's work towards a better world for all.
2. **Guidance, not prescription.** Incentivise and penalise transparently, but do not inhibit communally beneficial action through fixed, overly burdensome prescriptions or disproportionate administrative burdens.
3. **Meritocracy.** Open collaboration should be governed through meritocracy. Give credit where credit is due.

The platform is designed to give effect to these principles. For example, anyone can engage with the platform, but a comprehensive reputation system ensures that more opportunities are available to agents who maintain good conduct and who improve their knowledge and skills. Furthermore, an agent can start to report on their activities at any point in time – they do not need to complete a process of validation and registration of their activities first; an extensive scoring system, however, ensures that activities conducted according to high standards are clearly distinguishable from activities that do not uphold similar standards.

Impact principles

Agents should ideally see to it that their activities adhere to the following principles, to ensure that they maximise beneficial impact and minimise harm:

1. **Purposefulness.** An activity should have a clearly defined, justified purpose aimed at producing a net-positive outcome for society or the environment.
2. **Integrity of intent.** The motivation behind an activity should be genuine, transparent, and aligned with stated sustainability or ethical goals.
3. **Do no harm.** An activity should avoid, mitigate, or compensate for any foreseeable negative impacts that it may have, particularly on vulnerable populations or ecosystems. In the face of scientific uncertainty and potential for serious harm, the burden of proof should fall on demonstrating safety before action.
4. **Effectiveness.** The chosen intervention should be demonstrably capable of achieving its intended outcomes under realistic conditions.
5. **Efficiency.** The desired impact should be achieved with the least necessary resource use and collateral burden.
6. **Equity & inclusivity.** The benefits and burdens of an activity should be distributed fairly, with particular consideration given to marginalised stakeholders.
7. **Adaptiveness.** Activities should, where relevant, be periodically reviewed and adjusted in response to observed outcomes and contextual changes.

The platform encourages adherence to these principles by providing a rich set of questions that agents can use to guide them when they plan their activities. Reviewers are equipped with an equally rich set of questions to evaluate whether an activity adhered to these principles. The review process will reward activities who adhere to these principles with high scores. For the full lists of activity owner questions and reviewer questions, refer to Appendix XXX.

Scoring systems are also in place for the effectiveness and efficiency of intervention instruments. Intervention instruments can furthermore have scores for durability, ease of use, etc. These scoring systems are to help activity owners determine which intervention instruments are more appropriate or less appropriate for their activities and their contexts. They also help reviewers to evaluate the intervention measures of activities.

Accounting principles

When accounting for the impact of their activities, agents should ideally adhere to the following principles to ensure that the impacts of their activities are determined accurately, consistently, and transparently:

1. **Relevance.** Accounting should focus on the impacts that are significant to decision-making and stakeholders.
2. **Completeness.** All material impacts within the defined boundary should be included, avoiding selective reporting.
3. **Consistency.** Methods and assumptions should be applied consistently over time and across comparable activities.
4. **Accuracy.** Estimates should be as precise as possible given available data and methods, minimizing bias and uncertainty.
5. **Conservativeness.** Where uncertainty remains, assumptions should err on the side of not overstating benefits or understating harms.
6. **Transparency.** All data sources, assumptions, and methods should be clearly documented and open to verification.
7. **Traceability.** Each impact value should be traceable back to verifiable data, methods, and responsible entities.
8. **Verifiability.** Independent parties should be able to reproduce or confirm the reported results based on available information.

The platform provides a rich set of questions to agents (see Appendix XXX) to guide them towards adherence to these principles when accounting for the impacts of their activities. Reviewers are similarly equipped with a set of questions (see Appendix YYY) to help them evaluate whether an activity's impact accounting adhered to these principles.

Furthermore, the platform is intentionally designed to maximise transparency, traceability and verifiability. Every action performed on the platform is transparently recorded on the Hedera network. All information provided about activities, and any changes made thereto, along with the authors of the information and the changes, are captured in a publicly accessible, time-travelable Fluree ledger.

Reporting principles

When providing information about activities and their impacts agents should ideally adhere to the following principles to ensure that such information is of high quality, credible, and usable:

1. **Clarity.** Information should be presented in a clear, comprehensible manner for its intended audience.
2. **Relevance.** Reports should focus on information that is useful for stakeholders' decisions and evaluations.
3. **Completeness.** Positive and negative results alike should be disclosed, avoiding cherry-picking or greenwashing.
4. **Faithful representation.** Information should be free from material error or distortion.

The platform provides a set of questions to reviewers (see Appendix TTT) to help them evaluate the quality of information according to the principles above. In addition, the platform is designed to maximise the accessibility, accountability and comparability of information by capturing all information in a public, semantic ledger with a complete history of authorship.

5. **Accessibility.** Information should be easy to find, access, and use, including for non-specialist audiences.
6. **Accountability.** Those responsible for producing and reporting information should be clearly identified and answerable for its quality.
7. **Comparability.** Information should be presented in a way that allows comparisons across time, activities, and entities.

Agent Reputation System

The actions and behaviour of agents on the platform are governed by an elaborate reputation system. There are two primary domains in which an agent can have reputation, namely Knowledge & Skills and Conduct. All reputation is primarily gained and lost through actions and consequent events.

Knowledge & Skills reputation

The Knowledge & Skills reputation (KSR) domain is divided into subdomains representing different areas of expertise, such as “Marine Conservation”, “Air Quality Offsets”, “Carbon Offsets” and “Early Childhood Development” (the full list of subdomains are given in Appendix XXX).

KSR can be gained in several ways, such as through the verification of education or experience credentials, through receiving upvotes on a response posted to a help forum question, or through the contribution of a methodology. KSR can similarly be lost in several ways, such as by providing inaccurate information, receiving downvotes on a response to a help forum question, or losing a formal dispute. KSR can also be lost through time-based decay (more details are provided in the ‘Time-based decay’ section below). KSR cannot drop below zero.

Agents primarily use their KSR to earn income. For example, a review request will typically specify a minimum amount of reputation that an agent must have in a particular KSR domain to respond as a paid reviewer to the request.

Conduct reputation

An agent’s Conduct reputation (CR) score represents how active, helpful and respectful they have been on the platform to date. Unlike KS reputation, the Conduct reputation (CR) domain is not divided into subdomains, but is designed to incentivise thoroughness, reliability and respectful behaviour, while penalising bias, misinformation and disrespectful behaviour.

CR is gained through collaboration, positive contributions and good conduct. For example, casting a vote on the reliability of a newly proposed methodology will let an agent gain one CR point. When an activity owner requests a review of some aspect of their activity, they will also gain one CR point. If an agent asks a question on the help forum and at least three other agents “upvote” it as an important question (or one that they have too), the asking agent will be granted a CR point.

CR is primarily lost through undesirable behaviour. If, for example, an agent posts a response to a question on the help forum, and at least three other agents “downvote” it as a rude, irrelevant or deliberately misleading response, they will lose a CR point. If an agent claimed a seat on a review panel, but later cancels their seat, they can lose several CR points. Similarly, if an agent publishes a review request and then cancels it later, they will lose CR points. As with KSR, CR can also be lost through time-based decay.

An agent’s CR balance can drop below zero if they engage in more undesirable behaviour than desirable behaviour. If an agent’s CR balance drops below zero, their account will automatically be suspended from performing certain actions until their CR balance has sufficiently recovered (either by decaying to zero, or through the agent performing some “good” actions again – among the actions that they are still allowed to perform). If an agent’s CR

balance drops below a critical, negative threshold, the agent's account will be suspended completely from any and all activity until their CR balance has recovered sufficiently through time-based decay.

CR functions similar to shares in that agents with positive CR will be eligible for "dividends" paid out quarterly on a portion of the platform's profit.

For the full list of actions and the amount of CR gained or lost through each please refer to Appendix Y – Agent actions and events.

For the list of CR thresholds and the actions that they suspend or open up, see ???.

Possible alternative names for CR: TRIB, WINK, NOD, PAT, PEAS, (coffee/green) BEANS, COCO (coconuts), grapes, oranges, miles, claps, caps, DUC(K)(S)/DUX.

Time-based decay

All reputation – KSR and CR – decays. KSR decays at a rate of X points every Y months, while CR (both positive and negative CR) decays at a rate of D points every M months. Decay stops the moment that a reputation balance reaches zero, i.e., it cannot drop below zero due to decay.

Decay incentivises agents to remain active on the platform and to keep their knowledge and skills up to date. Elaborate.

Impact Scoring System

Overview

The Impact Scoring System (ImSco for short) is designed to measure how sure we can be about the extent and cause of some claimed impact. To do so, the system currently measures an impact and the activity that purportedly effected it against Independent Impact's sets of impact, accounting and reporting principles declared earlier; future upgrades to the platform will, however, accommodate other standards as well.

An ImSco score has two components to it: a validation component and a verification component. Both components are determined through a review process. In a typical scenario, the owner of an activity will publish several review requests for their activity as it progresses through the phases of planning, implementation and eventually monitoring. The initial review requests will typically be validation requests, while the later review requests (i.e., during or after implementation) will be verification requests.

Validation reviews evaluate the design of an activity *before* implementation (i.e., *ex ante*). They assess the likelihood that an activity will, if implemented according to its design, achieve its intended impact(s) while complying with some specific standard (chosen by the owner of the activity). The Independent Impact platform does not by default require an activity to undergo any validation reviews, but owners of activities – especially potentially high-risk and high-impact activities – are strongly encouraged to perform validation reviews before they proceed to implementation. Not only do validation reviews help activity owners to identify blind spots; they could also help them to secure funding for the implementation of their activities.

Verification reviews evaluate an activity and its impacts *during and or after* implementation and impact monitoring (i.e., *ex post*). They assess what actually occurred during the implementation of the activity and the monitoring of its impacts. As with validation reviews, the Independent Impact platform does not by default require that an activity or an impact claim undergoes verification; however, if no verification reviews are performed, no verification scores will be available for the activity or its impact claims, and the activity will almost certainly not find any buyers for its claimed impacts.

Validation and verification reviews are conducted according to the rules laid out in the 'Reputation-based reviewing' section. There is no difference between validation and verification reviews in terms of process; they do, however, make use of different reviewer question sets. The questions that will be in each set are determined by the chosen standard.

After a review had been conducted, the system will assign at most one[12] ImSco (validation/verification) point for each question to which the review panel had provided a positive response. If some aspect of an impact had already been reviewed during a previous review, the score for that aspect of the impact will be updated to the score from the current (i.e., most recent) review. To gain the maximum ImSco score possible (according to the chosen standard), all aspects of an impact (at least all aspects that are of interest to the chosen standard) must receive a positive review. This means that all aspects must be reviewed at least once and, if some aspects do not obtain perfect scores on their first review, the issues

[12] Points are weighted according to the reputation scores of the reviewers. More detail on this is provided below.

identified during their reviews must be addressed and new review requests must subsequently be published for those particular aspects. This process must be repeated until all issues have been resolved and each of the aspects has consequently received a positive review.

The other factor that impacts an ImSco score is the Knowledge & Skills reputation of the reviewers. To gain the maximum ImSco score possible per review, the reputation of the reviewers must meet or exceed the chosen standard's 'Expert' threshold for the relevant KS domains. If the reviewers' reputation amounts are lower than the Expert threshold, the score from the review will be weighted against their reputation.

The following example illustrates how ImSco is calculated from a review:

The owner of Activity ABC publishes a request on the platform to review aspects T and V of their activity against Standard P. They specify that the mandate of the review is validation, and that a user must have at least 15 reputation points in the Marine Conservation Knowledge & Skills domain to submit a review.

User Y, who has a Marine Conservation KS reputation score of 16, sees the review request and decides to respond. Standard P provides a set of nine validation review questions that must be used to review aspects T and V of an activity. User Y uses those nine questions to evaluate Activity ABC and subsequently submits a review that contains a positive response to seven of the nine review questions, but a negative response to the other two questions (because they found errors in the information or something similar).

Based on User Y's review, Activity ABC can at most be awarded seven out of nine validation ImSco points for aspects T and V. However, Standard P specifies that a user is only considered an expert in their domain if they have at least 18 KS reputation points in that domain. User Y currently has only 16 Marine Conservation KS reputation points, so the outcome of their review will be adjusted by a factor of 16/18. The final ImSco score assigned to Activity ABC for the validation of aspects T and V, based on the review of User Y, is thus (7/9) * (16/18) * 100 = 69.1%.

The owner of Activity ABC can now choose to do one of three things:

(a) Address the issues identified by User Y and then submit a new review request.
(b) Appeal User Y's review (see Section YUY of this document for details on the dispute process).
(c) Nothing. This means that Activity ABC's validation score for aspects T and V will forever remain at 69.1%. This score will be publicly available to everyone, including potential impact buyers.

A few final notes are in order to conclude the overview:

(a) There is no limit on the number of validation or verification reviews that can be performed on an activity or an impact. There are also no restrictions on or prescriptions for the extent of the scope of a review request. The owner of an activity can therefore either publish several narrowly scoped (validation or verification) review requests, or publish single, broadly scoped (validation or verification) review request.
(b) The owner of an activity can choose whether they want to allow other agents to provide information about their activity and its impacts. This may help them to gather the desired information quicker, or may provide them with a richer corpus of information. Information contributed by someone other than the activity owner will not, however,

automatically be granted ImSco points – any information must be reviewed by someone other than the owner and contributor (if those were separate agents) of the information if ImSco points are to be gained from it.

Reviewable aspects of impacts

The Independent Impact platform acknowledges a set list of impact and activity aspects by default. Activity owners are encouraged to provide information for their activities and impacts for as many of these aspects as possible. The platform provides an extensive list of guiding questions to aid activity owners in doing so.

Each of the aforementioned aspects is reviewable. For the default impact and activity aspects, reviewers are equipped with a rigorous set of questions to assist them in evaluating those aspects according to the Independent Impact principles.

The full list of default impact and activity aspects and their definitions, along with their guiding questions and their reviewer questions per mandate (validation/verification), are given in Appendix TTT. A positive reviewer response to a review question will grant the impact or activity either (maximum) one validation point or (maximum) one verification point. The current maximum validation score possible is 83 points, while the current maximum verification score is 70 points.

Note that other standards, when the platform is ready to accommodate them, may identify additional activity aspects which owners will need to provide information for (and have reviewed) if they wish to comply with those standards.

Other scoring systems

Indicators

Indicators can have reliability scores. These scores influence the overall score of the impact claims based on them.

A reliability score is assigned to an indicator through a voting process.

Methods

Methods and methodologies can have scores for robustness (scientific rigour). They can also have scores for applicability relative to specific impact indicators and contexts. These scores influence the overall score of the impact claims based on them.

Instruments

Measurement instruments can have scores for precision, accuracy and consistency. In the case of a physical piece of equipment, these scores can be easily and automatically derived from the product sheet; in the case of other instruments, however, such as questionnaires, it may be more difficult and may require voting.

Impact instruments can have scores for efficiency, efficacy, durability, ease of use, etc.

These scores influence the overall score of the impact claims based on them.

Educational and training courses

Educational credentials (and the courses by which they are obtained) can have quality (depth and completeness) scores. These scores will determine how many reputation points an agent can gain by obtaining the respective credentials.

Miscellaneous

Users of the platform will likely encounter other scoring systems also in operation on the platform. Those scoring systems are, however, not essential to the operation of the platform; they merely serve as useful guides to those agents who are interested in certain topics (such as “innovation”) or who are looking for opportunities for impact activities.

Bounties

General

A bounty on the II platform is very similar to its real-world counterpart: it is a sum of money locked up in a smart contract along with a description of a task that must be executed by an agent who wishes to receive the money. Any agent can publish a bounty for some task, if they have the necessary funds to do so. Bounties can be published for many things, such as gathering data, reviewing information, or creating an indicator. Bounties are typically open, which means that any agent who meets the requirements stated by the creator of the bounty can participate in its pursuit.

Where bounties on the II platform do differ from their traditional counterparts is the limitation that they place on the number of agents who can pursue the bounty at once. A bounty for a small task will typically allow only one agent to pursue it at any given point in time; a bounty for a larger task may allow multiple agents at once, but the agents will typically be required to collaborate, instead of compete. The purpose of this limitation is two-fold:

(a) Incentivise thoroughness over speed. Elaborate.
(b) Prevent wastage of human resources. Elaborate.

Note The agents who pursue a bounty are referred to as the "mission team" of the bounty.

Below follows the full set of rules that govern the creation of and participation in bounties on the Independent Impact platform:

1. Any agent can create a bounty for any of the tasks listed in Appendix SWS.
2. The sum of money (typically in the form of HBAR) pledged as compensation for successful completion of the task will be deducted from the account of the creator of the bounty at the time of creation and will be placed in a smart contract escrow.
3. The bounty period is divided into three subperiods or phases:
    a. the team assembly phase;
    b. the mission phase; and
    c. the dispute resolution phase.

    The dates that mark the start and end of each of the phases must be clearly specified by the creator of the bounty upon publication of the bounty. The dispute resolution phase must be at least seven days in length, but not longer than 30 days.
4. The creator of a bounty may, but is not required to, specify some minimum KS or CR reputation requirements that an agent must fulfil to be eligible to pursue the bounty.
5. Where minimum reputation requirements are specified for multiple KS domains, the creator of the bounty must also clearly specify how the compensation will be divided among the KS domains. Explain this through an example.
6. The number of places (also referred to as "seats" or "spots") available on a bounty's mission team will be determined by the number of KS reputation domains for which the creator of the bounty specified a minimum score requirement:
    a. If no such requirements were specified, the mission team can consist of only one agent.
    b. If reputation requirements were specified, the mission team can at most consist of one agent per KS domain.

7. An agent who wishes to participate in the pursuit of a bounty signals their intent by claiming a place on the mission team. As soon as a place is claimed, the place is no longer available to other agents.
8. If reputation criteria were specified for a specific seat, an agent can only claim that seat if they meet those requirements.
9. An agent can claim multiple seats on a mission team, provided that they meet the minimum reputation criterion for each of the seats claimed.
10. An agent cannot occupy seats on more than three mission teams on the platform at any point in time.
11. An agent can cancel their claim on a mission team seat, but will lose CR by doing so:
    a. If an agent cancels their seat claim during the team assembly phase or within the first quarter of the mission phase, they will lose one CR point.
    b. If an agent cancels their seat claim in the second quarter of the mission phase, they will lose two CR points.
    c. Cancelling a seat during the third quarter of the mission phase, will cost an agent three CR points.
    d. A seat cancellation during the fourth quarter of the mission phase will cost and agent four CR points.

    A seat cannot be cancelled during the dispute resolution phase.
12. An agent can transfer their mission team seat claim to another agent if it becomes apparent to them that they will not, due to circumstances beyond their control, be able to fulfil their responsibilities on time (i.e., before the end of the mission phase). If the transfer occurs before the end of the second quarter of the mission phase, the original holder of the seat will not lose any CR; if the transfer occurs after the end of the second quarter of the mission phase, the original holder of the seat will lose one CR point.
    A seat transfer cannot occur during the dispute resolution phase.
13. An agent can only transfer their mission team seat to an agent who:
    a. meets the domain-specific reputation criteria for the seat, if such were specified;
    b. does not hold seats on more than two other mission teams at the time of the transfer; and
    c. formally agrees to the transfer.
14. An agent who has transferred their seat on a mission team to another agent will not receive any compensation at the end of the bounty period, regardless of when or why the transfer occurred; the new agent (i.e., the agent to whom the seat has been transferred) will be singularly and entirely eligible for the compensation reserved for the seat.
15. A bounty can be cancelled by its creator, but the creator will lose CR, and potentially some of their escrowed funds, by doing so.
    a. If cancelled during the team assembly phase or during first quarter of the mission phase, the creator will lose one CR point; if cancelled during the second quarter, they will lose two CR points; if cancelled during the third quarter, the creator will lose three CR points; if cancelled during the final quarter, the creator will lose four CR points.
    b. An agent who had held a seat on the mission team for at least one quarter of the mission phase by the time the bounty was cancelled by the creator will receive 25 % of the compensation that was escrowed for them; an agent who had held a seat on the mission team for at least two quarters of the mission phase by the

time the bounty was cancelled by the creator will receive 50 % of the compensation that was escrowed for them; an agent who had held a seat on the mission team for at least three quarters of the mission phase by the time the bounty was cancelled by the creator will receive 75 % of the compensation that was escrowed for them. Any funds left in escrow after the mission team has been duly compensated will be returned to the account of the bounty creator.

A bounty cannot be cancelled during the dispute resolution phase.

16. Each agent who holds a seat on a bounty's mission team must submit their work before the mission deadline specified by the creator of the bounty.
17. If an agent with a seat on a mission team fails to submit their work on time, the failure will be treated as a seat cancellation; the agent will therefore lose CR according to the seat cancellation rules specified above, and will not receive any part of the bounty.
18. A bounty is by default open to all agents on the platform, meaning that the spots on the mission team will be given to the first eligible agents who claim them. The creator of a bounty can, however, choose to follow an invitation-only approach, meaning that seats on the mission team will only be available to agents who were specifically invited by the creator of the bounty.
19. If a bounty reaches the end of its team assembly period and none of the seats on the mission team has been filled, the bounty will automatically be cancelled by the platform. The creator of the bounty will not lose any CR, and the full bounty will be returned to the account of the creator.
20. If a bounty reaches the end of its team assembly period and only some of the seats, but not all, have been filled, the creator of the bounty will have the following options:
    a. Republish the bounty with new dates for the different phases, and possibly also with some adjustments to the reputation requirements and the size of the bounty.
    b. Continue with the bounty, allowing the existing mission team to move into the mission phase of the bounty period. Bounty portions for unfilled seats will be returned to the creator of the bounty at the end of the bounty period.
    c. Cancel the bounty. In this case, neither the creator of the bounty nor any of the mission team members will lose any CR, and the full bounty will be returned to the account of the creator.
21. Describe what happens during the dispute resolution phase. The creator of the bounty can request minor changes or corrections to work submitted by the mission team, and the mission team will be obliged to respond to those requests before the end of the dispute resolution phase. If the creator of the bounty has serious concerns about or objections to the work of the mission team, they can open a formal dispute that will be adjudicated by … The dispute resolution phase is also the period during which team members can lodge complaints with the bounty creator about each other (e.g., if the team feels that member X did not contribute their fair share, then they can lodge a complaint against member X with the bounty creator who will then…).
22. The bounty will be paid out to the mission team at the end of the dispute resolution phase of the bounty period.
23. The creator of a bounty will earn CR proportionate to the size of the bounty. Give the formula.

Note Every bounty will have its own discussion topic to facilitate communication between the creator of the bounty and the mission team, and also between the members of the mission

team as they collaborate on the task at hand. Only the creator of the bounty and the mission team will be able to post to the discussion topic, but the topic will be made publicly visible once the bounty period has ended.

Reputation-based reviewing

An agent can publish a request for the review of some claim or information. A review request is a type of bounty and is therefore governed by the rules provided in Section Bounty. However, several additional rules apply to review requests, as follows:

Note The mission team of a review request is referred to here as the "review panel".

Note When a bounty is a review request, its dispute resolution phase doubles up as the "Q&A phase" of the review request.

1. If an agent who wishes to publish a review request is neither the owner nor the contributor of the information that will be the subject of the review, they must obtain permission from the owner of the information to create the review request.
2. A review request must clearly specify the subject of the review, e.g., "Review of statistical robustness of activity XYZ's planned sampling strategy for impact monitoring," or "Validation of the purpose of project ZBA."
3. A review request must clearly state the mandate of the review, i.e., whether the objective is to validate, to verify or both.
4. A review request must specify the standard against which the review should be carried out.
5. The creator of the review request must specify at least one minimum KS reputation requirement for at least one relevant KS domain that must be met by agents who wish to act as reviewers.
6. Every reviewer must sign a declaration of conflicts of interest.
7. An agent cannot review information contributed by or related to them or their activities.
8. Each reviewer who holds a seat on a review request's panel must submit a review before the review deadline specified by the creator of the review request. Where multiple reviewers are present on a panel, the reviewers are encouraged to communicate with each other during the review period, in the interest of complementing each other's experience, knowledge and skills. Each reviewer will, however, still have to submit their own review to the review request before the review deadline.
9. Due compensation will be paid for an eligible review regardless of the outcome of the review.
10. Every review request provides the opportunity to one "ineligible" agent (i.e., an agent with not enough relevant reputation points yet to submit an eligible review) to submit a "training" review. The trainee's review must, during the Q&A phase at the end of the review period, be reviewed and graded by every eligible reviewer on the review panel. The grade assigned by an eligible reviewer will determine the amount of reputation points (up to a maximum of one) that the trainee reviewer will gain in the reputation domain of each eligible reviewer who had held a seat on the panel of the review request in question.
11. An "expert" reviewer who fails to grade the trainee reviewer's review at the end of a review process will lose two CR points.

12. During the Q&A period the reviewer must respond to any final questions that the review requester may have regarding the review that they had submitted. A reviewer who fails to respond to such questions will lose one CR point.
13. How can a review outcome be contested? During the dispute resolution phase (which all bounties, and therefore all RRs, have by default). What are the rules? Can a review be retracted by a reviewer?

Note It is advisable to restrict the scope of a review request as much as possible. A review with a broad scope will necessarily span several knowledge domains (i.e., reputation domains), which may lead to a large number of reviewers having to collaborate on the review. The more reviewers per request, the more complicated the coordination among them.

Note The trainee seat of the review system is a feature that cannot be "turned off" or prevented by the creator of the review request. It is an essential component of the Independent Impact platform and is tied to our strong belief that knowledge and skills should be shared with those who are willing to learn.

Voting

Reputation-based voting

When an indicator, instrument, method or methodology is published on the platform, it automatically sends out a vote request across the platform, inviting agents to vote on its reliability, durability, etc. (whichever is relevant). Such voting is based on reputation and is governed by the following rules:

1. Reputation-based voting is always domain-specific.
2. Every vote must be accompanied by a comment from the agent explaining why they voted as they voted.
3. Any agent, regardless of their relevant reputation score, can cast a vote; however, only the votes of agents with sufficient reputation will directly affect the outcome of the voting (e.g., the indicator's reliability score). An ineligible vote, along with its accompanying voter's comment, will still be visible to all other agents and could therefore potentially influence subsequent votes by other, eligible agents – for example, if it raises a valid concern that may have been overlooked by previous voters.
4. A voting request will always specify the minimum amount of reputation points (in a specific reputation domain) that an agent requires to cast an eligible vote. This minimum requirement, however, only applies to the first two eligible votes; thereafter the minimum amount of reputation required to vote is calculated as the rolling average of the reputation scores of the preceding eligible voters. Where more than five eligible votes have been cast, the calculation will consider only the five most recent eligible votes.
5. The outcome of a vote is calculated as the rolling reputation-weighted average of the eligible votes. Where more than five eligible votes have been cast, the calculation will consider only the five most recent eligible votes.
6. There is in principle no end to the voting period – any agent can at any point in time cast a vote on some indicator's reliability, if, for example, new information or new research findings have come to light and the agent feels that the current reliability score for the indicator is no longer justified. They can cast their vote without having to create a new voting request, but, should they wish to reattract the attention of other experts and ask them to (re-)vote on the indicator's reliability in the light of the new information or findings, they can send out a new voting request. To send out a new voting request, an agent must have sufficient reputation points in the relevant domain. TODO: How many?
7. Any agent who casts a vote, whether eligible or not, will receive one CR point for doing so.

How can someone contest someone else's vote?

Commenting

Agents can comment on something (pretty much anything). rdfs:comment.

TODO.

Anti-gaming mechanisms

Single account per user

A user can only have one account on the platform and must pass an identity check upon account creation. This is to prevent users from reviewing their own activities under a different identity.

Restrictions on simultaneous logins

A user cannot be logged into the platform from more than two different devices at the same time, nor can they be logged in from more than one device of the same kind at once. For example, a user can be logged in from their laptop and their phone at the same time, but they cannot be logged in from two different laptops at once.

Period-based action limits

Many actions on the platform are subject to rate limits. Please refer to Appendix UYU for the rate limits applicable to each action.

Reputation limits

(Minima and maxima. TODO.)

Technical implementation

This section is still a W.I.P.

Every entity (other than actions) on the platform has a Hedera topic. Posting to a topic costs HBAR, as per HIP-991. The Hedera topic of an entity is its ID in the Independent Impact ecosystem, i.e., the value that will be used for the "@id" field in the Fluree ledger.

Every action on the II platform is recorded as a transaction on the Hedera network. The message ID of the transaction is the "@id" value for the action.

Every action on the platform is recorded on the Hedera hashgraph and therefore incurs transaction fees. To create a new activity, for example, will cost something; to cast a vote, or to post a comment or a question to a topic, will also cost something. These costs will be generally very small as they will largely be determined by the Hedera network transaction fees – which are famously very low.

Every review request will have a discussion Hedera topic associated with it which will provide a space for the reviewers on the panel, including the trainee reviewer, to communicate with each other and the activity owner regarding the subject of the review. This topic will be made publicly visible when the review process concludes.

Bounties vs review requests: A review request is a type of bounty; it is just a lot more "specialised". For example, a bounty *could* specify minimum reputation requirements, but is not required to do so; a review request, on the other hand, *must* specify such requirements. What are the rules for bounties? How many bounties is an agent allowed to pursue simultaneously?

All reputation stuff, including CR, must be tokens, because then we can let them interact with smart contracts etc. Yes, all of them are tokens – fungible and divisible, but not tradable.

The owner of an activity must be able to allow or disallow free (unsolicited) public contribution of information about/to their activity.

Bibliography

1. World Resources Institute and World Business Council for Sustainable Development, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)* (Geneva and Washington, DC, WBCSD and WRI, 2004), available at: https://ghgprotocol.org/sites/default/files/ghgp/standards/ghg-protocol-revised.pdf [accessed 15 October 2025].
2. The AIA suite of ontologies.
3. TODO.