

ORCID POSI Self Assessment

Introduction

Considering the similarities and historic links between [ORCID's Founding Principles and values](#) and the [Principles of Open Scholarly Infrastructure \(POSI\)](#), we are asked from time to time about our stance on POSI. This paper contains a self-assessment of ORCID's performance against POSI Version 1.1. This self-assessment was developed by ORCID staff, and reviewed and endorsed by the ORCID Board at their September 2024 meeting.

We welcome the community to [reach out to us with feedback](#) about our POSI Self-Assessment.

Background

In 2015, a [blog post](#) was published articulating a new set of principles “by which open Infrastructures to support the research community could be run and sustained.” The authors espoused that the principles they set forth, called the *Principles for Open Scholarly Infrastructure (POSI)*, “could support the creation of successful shared infrastructures” by ensuring community governance, sustainability of funding and preservation of community ownership.

In 2020, the Crossref board [formally adopted](#) and endorsed POSI, shortly thereafter followed by [Dryad](#) and [ROR](#). Since then, 16 additional organizations have adopted the principles, making for a total of [19 current adopters](#), the most recent adopting the principles this year.

Summary

ORCID's 10 Founding Principles stress openness, trust, and inclusivity, with no-charge access for researchers, who maintain full control of their data. We believe that ORCID's strict adherence to our own Founding Principles, that center strongly on the concepts of community governance and researcher control, has been essential to winning the trust and participation of researchers themselves, and this in turn has been essential to the wide uptake and utilization of ORCID across the globe by researchers and institutions alike.

While we are not yet ready to fully adopt the POSI Principles, as set out further below, we believe now is a helpful time to publish our self assessment against the POSI Principles in order to clarify our position and to encourage community discussion about how they can be further refined and improved. With this in mind, ORCID has undertaken a self-assessment not only to gauge our own performance against the POSI Principles, but to

compare them with the 10 Founding Principles that have guided our activities since the beginning of ORCID.

Our detailed self-assessment has confirmed our long-held belief that POSI is indeed broadly aligned with our own Founding Principles and values. While we agree with the “spirit” of nearly all of the POSI Principles, we have identified some inconsistencies between how certain POSI Principles are currently written, how most of the current POSI adopters have interpreted them, and how we operate. According to the POSI website, adoption of the POSI Principles is meant to be a “statement of intent” to comply with them, even if the organization is not fully compliant.

At ORCID we take principles very seriously. Our own 10 Founding Principles were established very early in our history by our inaugural Board and have never changed — we view them as a cast-iron promise to our community about how we will conduct ourselves. For this reason, until we are comfortable that all of the POSI Principles are specifically expressed in a way that we can fully get behind, we feel unable to formally adopt them in their current form.

We are encouraged to learn from discussions with some of the current POSI adopters that they are starting to work on an update to both the POSI Principles and the accompanying FAQ. ORCID is eager to participate in these discussions and we stand committed to engage with the POSI adopters group and the broader scholarly infrastructure community in this work to further evolve POSI.

ORCID seeks to be as transparent as possible in taking decisions, and we strive to formulate policy with robust community input. We encourage the POSI adopters group to adopt a similar open and transparent approach to building community consensus around the next version of POSI. In our self-assessment, we have also included commentary about each of the principles which serves as our feedback to the POSI adopters, our suggestions about how the principles can be improved, and our questions about the way how they should be interpreted.

Assessment Methodology

While there is no formal or standardized mechanism for documenting or auditing compliance with POSI, organizations are invited to “make a public statement of intent [to adopt the principles] and to invite community appraisal.” [Current adopters](#) have used a variety of conventions in their self assessments with the majority utilizing a “traffic light” system to classify their adherence to each principle as red, amber, or green.

We feel, however, that a more nuanced approach in assessing ORCID’s alignment with the principles is helpful, so we have taken inspiration from the approach used by recent POSI adopter [SciPost](#), assessing each POSI Principle on two dimensions, compliance and relevance, using the rating scales shown in Table 1.

Self-assessed compliance of ORCID with POSI Principle	Highly compliant	Partly compliant	Minimally compliant
Relevance of POSI Principle to ORCID’s vision, mission, founding principles and/or values	Highly relevant	Partly relevant	Minimally relevant

Table 1: Dimensions and rating scales used in ORCID’s POSI self-assessment

This enables a more holistic view of ORCID’s alignment with the POSI Principles by considering not only how we are doing in relation to each principle, but also how important the principle is to ORCID’s [vision, mission, values and our own principles](#).

Summary of ORCID Self-assessment

As might be expected, given the inspiration that the original POSI authors drew from ORCID’s own founding principles, ORCID is highly compliant with 11 of the 15 POSI Principles, as summarized in Table 2.

As can be seen, ORCID is highly compliant with all of the principles that are highly relevant to us, bar one: “Open source”. This is further discussed below in the detailed commentary.

There are two POSI Principles that we are minimally compliant with: “Patent non-assertion”, and “Formal incentives to fulfil mission & wind-down”. We have judged that neither of them is strongly relevant to ORCID. Finally there is one POSI Principle, “Living will” which we assess that we are partly compliant with and that is partially relevant to us as currently written.

	Highly relevant	Partly relevant	Minimally relevant
	10	1	0
Highly compliant	<ul style="list-style-type: none"> • Coverage across the scholarly enterprise • Stakeholder Governed • Non-discriminatory participation or membership • Transparent governance • Time-limited funds are used only for time-limited activities • Goal to generate surplus • Goal to create financial reserves • Mission-consistent revenue generation • Revenue based on services, not data • Open data • Available data 	<ul style="list-style-type: none"> • Cannot lobby 	
Partly compliant	1	1	0
	<ul style="list-style-type: none"> • Open source 	<ul style="list-style-type: none"> • Living will 	
Minimally compliant	0	1	1
		<ul style="list-style-type: none"> • Patent non-assertion 	<ul style="list-style-type: none"> • Formal incentives to fulfil mission & wind-down

Table 2: Summary of ORCID's POSI self-assessment

ORCID/POSI Alignment

Given the central role that ORCID's vision, mission, values and particularly our own 10 founding principles play in ORCID's policy setting and decision making, it was important to us to understand the alignment between these and the POSI Principles. This is summarized in Table 3.

From this, it can be seen that all of ORCID's values, and all but one of our founding principles, can be related to the POSI Principles. The missing ORCID founding principle is the 1st, that "ORCID will work to support the creation of a permanent, clear, and unambiguous record of research and scholarly communication by enabling reliable

attribution of authors and contributors”, which is perhaps too specific for the more general nature of the POSI Principles.

POSI Principle	ORCID Vision/ Mission	ORCID Founding Principle	ORCID Value
Governance			
Coverage across the scholarly enterprise	Vision/Mission	2nd	Inclusivity
Stakeholder Governed		10th	Trustworthiness
Non-discriminatory participation or membership		4th, 5th, 3rd	Inclusivity
Transparent governance		10th	Openness
Cannot lobby			
Living will			Trustworthiness
Formal incentives to fulfill mission & wind-down activities			
Sustainability			
Time-limited funds are used only for time-limited activities	Vision/Mission		Trustworthiness
Goal to generate surplus	Vision/Mission		Trustworthiness
Goal to create financial reserves	Vision/Mission		Trustworthiness
Mission-consistent revenue generation		9th, 5th	Trustworthiness
Revenue based on services, not data		9th	
Insurance			
Open source		8th	Openness
Open data (within constraints of privacy laws)		7th, 6th	Openness
Available data (within constraints of privacy laws)		7th, 6th	Openness
Patent non-assertion			Openness

Table 3: Alignment between POSI Principles and ORCID’s mission, vision, values and Founding Principles

Conversely, it can be seen that most of the POSI Principles are aligned with ORCID’s vision, mission, values and/or founding principles. The two exceptions are “Cannot lobby” and “Formal incentives to fulfill mission & wind-down activities”. “Cannot lobby” is partly aligned with requirements placed on ORCID as a US-based 501(c)(3) tax-exempt organization.

“Formal incentives to fulfil mission & wind-down activities” is arguably inconsistent with our mission to provide a sustainable service which will persist over the long haul.

Beyond the specific principles, one significant incompatibility between ORCID and POSI remains. ORCID seeks to be as transparent as possible in taking decisions and formulating policy with community input. Historically, discussion about and development of POSI has taken place only among the existing POSI adopters group (“[The POSI Posse](#)”) with no clearly defined mechanism for seeking or considering outside input.

Detailed POSI self assessment for ORCID

The table below details ORCID’s self assessment of its compliance with each of the POSI Principles. Version 1.1 of the POSI Principles has been used in conducting this self-assessment.

Note: the *commentary* elements below are not part of ORCID’s self-assessment of compliance with the POSI Principles; rather they represent reflections and considerations about the POSI Principles which emerged during ORCID’s internal discussions about the POSI Principles. We are publishing them here in the spirit of transparency, and in the hope that the POSI adopters will consider this feedback as they develop further iterations of the POSI Principles.

Governance			
POSI Principle	Coverage across the scholarly enterprise – research transcends disciplines, geography, institutions, and stakeholders. Organisations and the infrastructure they run need to reflect this.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and time. Our 2nd Founding Principle states that “ORCID will transcend discipline, geographic, national, and institutional boundaries.” One of our three Values is inclusivity.</p> <p>ORCID has been successful in achieving these aspirations. We have a very broadly based set of stakeholders: researchers in every country in the world and in every discipline use our services; and we have member organizations in 60 countries with broad cross-sectoral participation from Universities & Research Institutions, Funders & Facilities, Governments & Policy Makers, Publishers, and Vendors & Service Providers.</p>		

	Like many other scholarly infrastructure organizations, parts of the Global South are under-represented in our community, however we are working hard to change this through programs to drive participation in under-represented communities such as our Global Participation Fund grant program and our Membership Equity Pricing policy.
<i>Commentary</i>	This POSI Principle resonates strongly with ORCID’s own principles and values.

POSI Principle	Stakeholder Governed – a Board-governed organisation drawn from the stakeholder community builds confidence that the organisation will take decisions driven by community consensus and a balance of interests.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s 10th Founding Principle states that “ORCID will be governed by representatives from a broad cross-section of stakeholders, the majority of whom are not-for-profit...” and this is enshrined in our bylaws. One of our values is Trustworthiness</p> <p>ORCID is governed by a Board of Directors elected by our organizational members. The Board of Directors ultimately controls the strategy and direction of the organization. The majority of our Directors are representatives of our member organizations, while two Board seats are reserved for non-affiliated researchers. As a US-based non-profit organization, exempt from tax under section 501(c)(3) of the US Internal Revenue Service (IRS) Code, we are subject to US laws and regulations governing charitable entities, including the requirements that we must be organized and operated exclusively for charitable purposes and our activities cannot impermissibly benefit private interests.</p> <p>Each year, we hold an open call for Board nominations which includes detailed guidance on the criteria that will be used in selecting candidates. These criteria are adjusted each year by the Board in order to maintain a balanced composition of the Board across a number of dimensions including geography, sector, gender and skillset.</p> <p>We maintain a Board meeting attendance fund to help ensure that participation in our governance process is accessible to all who are qualified, regardless of their organization’s ability to fund travel and other costs of participating in Board meetings.</p>		
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID’s own principles and values.</p> <p>We note that the definition of this principle overlaps with the principle of “Transparent governance”. For maximum clarity in describing compliance with the principles, it would be preferable if each principle was defined so as to be orthogonal to the others.</p>		

POSI Principle	Non-discriminatory participation or membership – we see the best option as an “opt-in” approach with principles of non-discrimination and inclusivity where any stakeholder group may express an interest and should be welcome. Representation in governance must reflect the character of the community or membership.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>This POSI Principle is aligned with multiple ORCID Founding Principles. ORCID’s 4th Founding Principle states, “Access to ORCID services will be based on transparent and non-discriminatory terms posted on the ORCID website,” and one of our Values is Inclusivity.</p> <p>Regarding researchers, Our 5th Founding Principle states that “Researchers will be able to create, edit, and maintain an ORCID identifier and record free of charge.” Our bylaws include the provision that approval by a majority of our organizational members is needed to alter our commitment to free use for researchers.</p> <p>Anyone in the research community can register for an ORCID iD. The definitions of “researcher,” “scholar,” and “contributor” evolve over time and vary from field to field. Rather than have a rigid — and likely incomplete — definition of who would “qualify” for an iD, that ORCID would need to “verify”, ORCID enables everyone who finds benefit from using the ORCID Registry to be able to obtain and use an ORCID iD.</p> <p>We also strive to reduce other barriers to use of our services. Our core registry service and our technical and support documentation are available in the languages used by more than 95% of our users. We are publicly committed to web accessibility and have made significant investments in recent years in improving compliance.</p> <p>Regarding organizational members, ORCID’s 3rd Founding Principle states that “Participation in ORCID is open to any organization that has an interest in research and scholarly communications.” We are sustained by fees paid by our member organizations; our membership fees are set according to published set of fee principles and are guided by equity and inclusivity. Our fees are differentiated according to the size of the member organization and the member benefits offered. Our fee structure is constructed so as to reflect affordability for organizations of different sizes, in different sectors and according to local economic conditions. Our fees are not discounted or negotiated with individual organizations.</p> <p>One caveat is that as a US organization, ORCID is barred by the US Department of Treasury from having voting members from certain sanctioned countries. However mechanisms could most likely be developed for such organizations to be able to</p>		

	<p>participate as non-voting organizations should sufficient demand arise. This restriction does not apply to the use of ORCID’s free services.</p> <p>All of our services are governed by an openly published and equitable set of terms of use which have been developed over ORCID’s history through dialog with our community.</p>
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID’s own principles and values.</p> <p>However, it is not entirely clear if this principle refers strictly to participation in our governance processes or more broadly, participation in and use of our services. We have interpreted this principle broadly, however it could benefit from being more clearly stated.</p>

POSI Principle	<p>Transparent governance – to achieve trust, the processes and policies for selecting representatives to governance groups should be transparent (within the constraints of privacy laws).</p>		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>One of our Values is Openness and our 10th Founding Principle states, “ORCID ... will strive for maximal transparency by publicly posting summaries of all Board meetings and annual financial reports.”</p> <p>Each year we hold an open call for Board nominations, publishing the criteria that will be used in selecting candidates for the coming election. A nominating committee comprising both current Board members and external community representatives is then tasked with constructing an election slate. The slate is put up for vote by representatives of our member organizations in our annual Board elections, and we maintain a process for members to nominate independent candidates to the election should they not be satisfied with the slate. Per our bylaws and Delaware law, our elections are held at a (virtual) Annual Meeting of our Members, which is open for representatives of all of our member organizations to attend.</p> <p>ORCID practices several other aspects of transparent governance beyond our Board election process. We publish summaries of all of our Board meetings detailing topics discussed and motions passed on our website. As an entity subject to US tax-exempt regulations, we are required to make our annual tax returns, which includes our financial statements, publicly available, which we do on our website. Our governance documents, including our certificate of incorporation, our bylaws and Board and committee charters are published on our website.</p> <p>We also hold ourselves accountable to our community in other ways, for example by publishing an annual report, and holding a public town-hall meeting each year,</p>		

	where anyone can raise concerns or ask questions.
<i>Commentary</i>	This POSI Principle resonates strongly with ORCID’s own principles and values. Although the headline of this principle refers to transparent governance, the definition speaks of only one aspect of governance — the mechanism for selecting representatives to governance groups. In practice there are many other aspects of transparent governance which ORCID practices and which have been, in our experience, critical to gaining and maintaining the trust of our community. Examples include the open availability of governance documents, the publication of key decisions of the governance body, the open availability of financial statements, and mechanisms for accountability to the community such as annual reports and town-hall meetings. We have chosen to include these broader aspects of transparent governance in our self-assessment against this POSI Principle.

POSI Principle	Cannot lobby – infrastructure organisations should not lobby for regulatory change to cement their own positions or narrow self-interest. However, an infrastructure organisation’s role is to support its community, and this can include advocating for policy changes.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Partly Relevant
<i>Self assessment</i>	<p>As an organization exempt from tax under section 501(c)(3) of the US IRS Code, ORCID is specifically restricted from engaging in political activity (i.e, participation in election campaigns) and is limited in how much legislative (<i>lobbying</i>) activity we may conduct.</p> <p>We do participate in discussions with government entities and policy makers as one of our stakeholder groups, seeking to educate them on the benefits of adoption of ORCID and other open scholarly infrastructure. We are pleased to have been included in a number of national and regional PID and research strategies.</p>		
<i>Commentary</i>	<p>Due to our organizational structure under US 501(c)(3) regulations, ORCID is inherently compliant with this principle.</p> <p>However, we feel this principle is only partly relevant to scholarly infrastructure organizations. As an organization seeking global participation (in alignment with the POSI Principle of “Coverage across the scholarly enterprise”), it is hard to know who we could lobby, even if we were able to and had the resources to do so, there being no single body which is responsible for regulation across all of the jurisdictions where we operate. Instead, we seek to operate in a way that is as compatible as possible with the regulatory frameworks in the places where our services are used, as long as those regulations are compatible with our values.</p>		

POSI Principle	Living will – a powerful way to create trust is to publicly describe a plan addressing the conditions under which an organisation or service would be wound down. It should include how this would happen and how any assets could be archived and preserved when passed to a successor organisation or service. Any such organisation or service must adopt POSI and honour the POSI Principles.		
<i>Compliance</i>	Partly Compliant	<i>Relevance</i>	Partly Relevant
<i>Self assessment</i>	<p>One of ORCID’s values is Trustworthiness. As part of our trust program, We have sought to create the conditions under which a successor organization could pick up and continue our work by complying with the POSI “Insurance” principles mentioned below.</p> <p>We are constrained by US tax exempt laws that our assets must be permanently dedicated to purposes specified in section 501(c)(3) of the IRS Code, specifically charitable, religious, educational, scientific, or literary purposes, (or testing for public safety, fostering national or international amateur sports competition, or preventing cruelty to children or animals). This means that if ORCID were to dissolve, its assets must be used for other 501(c)(3) tax-exempt purposes determined by the Board, which could be by distribution to another tax-exempt entity, to the federal government, or to a state or local government for a public purpose. We are further constrained by our bylaws which require the approval of the majority of our member organizations for the sale or other transfer of all or substantially all of the assets of the Corporation, a merger or consolidation, or the dissolution of the organization.</p> <p>We don’t however feel that we can describe ourselves as fully compliant with this principle as we have not published a plan that describes in any detail how our work and assets could be transferred to a successor organization, nor have we identified any organizations that are ready, willing, and able to continue our work, who would likely need to collaborate in the creation of such a plan.</p> <p>Further, unlike some other US States, Delaware law does not require that our assets be used for the exact same purpose as currently pursued in the event of our dissolution. Therefore, in order to adhere to this principle more fully, our certificate of incorporation would need to be amended to require the assets be dedicated to the current purpose in perpetuity.</p>		
<i>Commentary</i>	<p>A review of the POSI self assessments of the current adopters reveals that only a minority have assessed themselves as compliant with this principle, and those that have done so, tend to have explained their compliance through restatement of the separately defined insurance principles. Even among the organizations that have self-assessed as compliant with this principle, we were unable to locate a single publicly accessible “living will” document.</p> <p>The organizations that have the most convincing living will self-assessments have almost all identified specific successor organization(s) and have bilateral</p>		

	<p>agreements in place with those organizations. In each of these cases, the identified successors are organizations that the subject organization has a pre-existing relationship with for other operational and/or governance reasons.</p> <p>We wonder, therefore, whether creating a living will on a unilateral basis is actually feasible, as the specifics of how an orderly wind-down and transfer of assets and operations would take place depend not just on the nature, capabilities and structure of the organization winding down, but also on those of the organization taking on the responsibilities.</p> <p>We think that this principle might be better reframed to focus on (a) encouraging organizations to constrain themselves as to the nature of any successor organization they would be prepared to transfer their operations to; and (b) creating the conditions for orderly wind-down and transfer of assets as described in the “Insurance” principles, rather than creating specific detailed pre-defined transition plan. Given the POSI Principle to generate reserves, there should be sufficient time available to create an orderly handover plan to a successor organization in such an eventuality.</p>
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POSI Principle	<p>Formal incentives to fulfil mission & wind-down – infrastructures exist for a specific purpose, and that purpose can be radically simplified or even rendered unnecessary by technological or social change. Organisations and services should regularly review community support and the need for their activities. If it is possible, the organisation or service (and staff) should have direct incentives to deliver on the mission and wind down.</p>		
<i>Compliance</i>	Minimally Compliant	<i>Relevance</i>	Minimally Relevant
<i>Self assessment</i>	<p>As an organization that is focused on providing <u>Persistent</u> Identifiers (PIDs), we cannot state with any credibility that we are formally incentivized to fulfill our mission and wind-down. If anything, we are incentivized to think about ways to ensure that we continue to evolve and deliver on our mission as the technology, our membership, and researchers’ needs continue to change over the long term.</p> <p>As a hub assuring the reliability and security of PIDs and the associated metadata, we are invested in establishing and maintaining financial and operational sustainability plans. We have an aspirational vision that we don’t anticipate being fulfilled any time in the near future, and even if it were, the need for ongoing services to continue to support the mission would remain.</p> <p>The most we can say here is the following:</p> <p>Firstly, we can and do contemplate a time when the specific kind of organization we are, or the specific kinds or services we provide, may no longer be the only, or even the best way to fulfill our vision, and that we understand that technological,</p>		

	<p>organizational or even regulatory change may eliminate the need for ORCID to continue to exist in its current form. We assess the ongoing community need for ORCID as part of our periodic strategy planning process.</p> <p>Secondly, as an organization with a broad and diverse base of financial support, we can only continue to exist as long as our members continue to “vote with their wallets” and pay their membership fees each year. If and when the need for our services diminishes, we expect that we will receive a pretty strong signal of this through reversal of the membership and corresponding revenue growth we have seen thus far throughout our history.</p>
<p><i>Commentary</i></p>	<p>In reviewing the self-assessments of the current POSI adopters, we can only find one case of an organization that is formally incentivized to fulfill its mission and wind-down, through an explicit time limit in its constitution.</p> <p>Nearly all of the other adopters have expressed their compliance with this principle in similar terms to us, i.e. confirming their understanding of the need to regularly review community demand for their services, and committing not to “outstay their welcome” should the demand no longer exist. However this is not what a plain reading of the text of the principle requires. It seems, therefore, that this principle would be better reframed along these lines, rather than implying, as the current principle does, that the missions of all scholarly infrastructure organizations are inherently time-limited and therefore that formalizing incentives to wind down is important.</p> <p>It should also be noted that as written, the principle of creating “formal incentives to fulfill mission & wind-down” is contradictory to POSI’s sustainability principles.</p>

Sustainability			
<p>POSI Principle</p>	<p>Time-limited funds are used only for time-limited activities – operations are supported by sustainable revenue sources - whereas time-limited funds are used only for time-limited activities. Depending on grants to fund ongoing and/or long-term infrastructure operations fully makes them fragile and distracts from building core infrastructure.</p>		
<p><i>Compliance</i></p>	<p>Highly Compliant</p>	<p><i>Relevance</i></p>	<p>Highly Relevant</p>
<p><i>Self assessment</i></p>	<p>Sustainability is inherent in our vision of “a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and <u>time</u>,” and our mission as an organization that provides <u>persistent</u> identifiers.</p> <p>Since reaching financial breakeven in 2019, ORCID is now in the fortunate position of being fully financially supported by the annual membership fees paid by our 1,400+ organizational members around the world and is therefore compliant with</p>		

	<p>this principle as long as one considers annual membership fees not to be “time-limited”. This is only true of course as long as our members choose to renew their memberships with us each year.</p> <p>We are very fortunate to have a very high rate of membership renewal (>97%). We don’t take this for granted, and it doesn’t come for free. We dedicate approximately 25% of our resources to building, supporting, and maintaining our membership base. Our product and technology development activities are also focused on ensuring that we continue to provide value to our stakeholders in return for their support.</p>
<p><i>Commentary</i></p>	<p>This POSI Principle is highly aligned with ORCID’s mission and vision.</p> <p>However, it took ORCID nine years from formation to reach financial breakeven, and during that time, ORCID survived only thanks to a series of one-off investments, in the form of start-up loans from some of our early members, and grants from charitable foundations. This is not an uncommon experience among scholarly infrastructure organizations. Finding a sustainable and fair business model, and building a sufficient support base to fund our operations was perhaps the hardest-won achievement of ORCID’s first decade. It is not clear from this POSI Principle whether taking a decade to reach the point of financial sustainability counts as a “time-limited activity.”</p>

<p>POSI Principle</p>	<p>Goal to generate surplus – organisations (or services) that define sustainability based merely on recovering costs are brittle and stagnant. It is not enough to merely survive; organisations and services have to be able to adapt and change. To weather economic, social and technological volatility, they need financial resources beyond immediate operating costs.</p>		
<p><i>Compliance</i></p>	<p>Highly compliant</p>	<p><i>Relevance</i></p>	<p>Highly relevant</p>
<p><i>Self assessment</i></p>	<p>Since reaching financial breakeven in 2019, ORCID has continued to generate a net operating surplus each year.</p> <p>In 2024, we adopted a set of financial measures which target an average annual operating surplus of approximately 4% over any three year window. Given the specific dynamics of ORCID’s operating model, this level of surplus allows us to both maintain a relatively constant level of financial reserves as a proportion of our annual operating budget, given the patterns of cost inflation and membership growth we expect to see, as well as underwrite the periodic one-off investments required to continue to meet the demands of the evolving technologies on which we depend.</p>		
<p><i>Commentary</i></p>	<p>This POSI Principle is highly aligned with ORCID’s mission and vision to provide a set of services that are persistent and connect researchers across time.</p>		

	<p>We would encourage other organizations seeking to ensure sustainability to conduct a similar kind of financial modeling exercise to the one we have completed in order to understand the financial dynamics of the organization and set an appropriate surplus target.</p>
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POSI Principle	<p>Goal to create financial reserves – a high priority should be having ring-fenced financial reserves, separate from operating funds, that can support implementing living will plans, including a complete, orderly wind down or transition to a successor organisation, or major unexpected events.</p>
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<i>Compliance</i>	Highly compliant	<i>Relevance</i>	Highly relevant
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<i>Self assessment</i>	<p>After five years of consistently generating a net operating surplus, In 2023, the ORCID Board adopted an investment policy statement and designated a formal Long-term Capital Reserve Fund, separate from our operational cash reserves.</p> <p>The Long-term Capital Reserve can only be used with the explicit authority of the Board, and only for the following purposes:</p> <ul style="list-style-type: none"> • To fund periodic one-off investments necessary to deliver ORCID’s mission and strategic objectives • To underwrite unforeseeable short-term operating cash shortfalls in order to maintain operational stability and continuity in fulfilling ORCID’s mission, in accordance with the measures and goals of the Board approved annual budget • To facilitate the orderly wind-down of the organization should ORCID’s mission become fulfilled • To fulfill the transition of the mission to a successor organization should ORCID no longer be viable in its current form <p>The Board has set, and ORCID has achieved, a target for the Long-term Capital Reserve at two-thirds of our annual operating budget. We feel this is sufficient to meet the needs envisaged for the fund and the goals of the related POSI Principle, whilst not generating an undue financial burden on the community that supports us.</p>
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<i>Commentary</i>	<p>This POSI Principle is highly aligned with ORCID’s mission and vision to provide a set of services that are persistent and connect researchers across time.</p> <p>We note that one of the designated purposes of our Long-term Capital Reserve, the ability to “fund periodic one-off investments necessary to deliver ORCID’s mission and strategic objectives” is not within the scope of this POSI Principle as currently defined. In our experience, technology-based service organizations periodically need to make significant investments to upgrade or replace key elements of their technology, and those investments typically cannot be funded purely from operating budgets instead needing to be amortized over several years.</p>
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More broadly, we feel that it is important for scholarly infrastructure organizations not just to create a financial reserve, but to have a clear and carefully considered policy on the level of reserves needed. While maintaining a reasonable surplus to build up reserves is essential for long-term sustainability, building up excessive reserves locks away community capital that might otherwise be used for different purposes. To our view, scholarly infrastructure organizations have a responsibility not to levy more financial demand on their community than is required to support their mission. Having too much money flowing into an infrastructure organization can also encourage “mission drift”, i.e. the need to find things to spend the money on that are not aligned with the organization’s mission or the priorities of its community and potentially are beyond its expertise.

POSI Principle		Mission-consistent revenue generation – revenue sources should be evaluated against the infrastructure’s mission and not run counter to the aims of the organisation or service.	
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s 9th Founding Principle states “... Any fees will be set to ensure the sustainability of ORCID as a not-for-profit, charitable organization focused on the long-term persistence of the ORCID system.”</p> <p>In practice, our only current source of revenue, beyond limited returns on our invested capital reserves, are the membership fees paid by our member organizations. Collectively, the financial support of our member organizations allows us to uphold our 5th Founding Principle that “Researchers will be able to create, edit, and maintain an ORCID identifier and record free of charge.”</p> <p>While we reserve some value-added services for our members, we maintain a core set of publicly available services which may be used by anyone, free of charge and without registration, including the ORCID registry and our public APIs.</p> <p>We regularly review our membership benefits, seeking to raise sufficient revenue to continue to provide those core services openly and free of charge, whilst offering sufficient value to our members for them to be able to justify continued membership.</p>		
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID’s own principles and values.</p> <p>From the experience of ORCID’s journey to sustainability, we’ve learned that finding a model that is compatible with the organization’s mission while raising sufficient revenue to sustain the organization is extremely challenging. ORCID iterated through a number of models before settling on the current variant.</p>		

POSI Principle	Revenue based on services, not data – data related to the running of the scholarly infrastructure should be community property. Appropriate revenue sources might include value-added services, consulting, API Service Level Agreements or membership fees.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID's 9th Founding Principles states, "ORCID identifiers and record data (subject to privacy settings) will be made available via a combination of no-charge and for-a-fee APIs and services..."</p> <p>In practice, this means that we publish an annual public data file, further described below, and all public ORCID record data (per record holders' privacy settings) is available on our public Registry web pages and accessible via our anonymous and public APIs.</p> <p>Our revenue stems only from the membership fees paid by our 1,400+ organizational members, bar the limited returns on our invested capital reserves. In addition to supporting our mission, our members receive a set of membership benefits including enhanced access to our services, the ability to contribute data to their researchers' ORCID records, and the right to formally participate in our governance.</p>		
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID's own principles and values.</p> <p>For ORCID, this principle is congruent with the POSI Principle of "Mission-consistent revenue generation". We believe that this is also true for other infrastructure organizations whose mission is to provide PID and metadata services. However, we think it is entirely possible that there may be other types of infrastructure organizations for which this is not true. We can contemplate organizations where it might be more important to provide a set of services free of charge, and a way of funding them might be to generate revenue from data in some way. Given the difficulty in achieving a sustainable financial model for scholarly infrastructure services, if POSI seeks to be applicable beyond the data- and metadata-centric organizations where it started, we are not sure it is wise to constrain sustainability models to this extent.</p> <p>We also note that "data related to the running of the scholarly infrastructure" is a very broad definition. While we make the data directly related to our core identifier and metadata service available free of charge, we gather many other kinds of data in the course of operating our services, for example detailed logging and diagnostic data, which would neither be valuable or of interest to our community, nor financially justifiable for us to make available. Thus we think that the kinds of data subject to this principle should be more clearly defined.</p>		

Insurance			
POSI Principle	Open source – all software and assets required to run the infrastructure should be available under an open-source licence. This does not include other software that may be involved with running the organisation.		
<i>Compliance</i>	Partly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s 8th Founding Principle states, “All software developed by ORCID will be publicly released under an Open Source Software license approved by the Open Source Initiative. For the software it adopts, ORCID will prefer Open Source.”</p> <p>In practice this means that the software used to operate the ORCID Registry is available openly in our GitHub repository under an MIT-style license. The license is simple and easy to understand and places almost no restrictions on what can be done with the ORCID Open Source project. Our version of the license has a specific exclusion for ORCID’s branding, trademarks or the “look and feel” of the websites at the orcid.org URL, even if they are contained within the project.</p> <p>We mark ourselves as only partly compliant here because, given the complexity of our system, and the realities of modern software development, replicating the system from the source code alone would likely be very difficult. We use multiple resources to maintain and deploy the ORCID registry, including our integration and deployment pipeline, and our test cases and test data suites, and these are not currently included in our open source project. We have also developed several administrative tools which are not currently included in the open source project.</p> <p>This is an area that we need to revisit in the future, however we will have to carefully consider the balance of allocation of our finite software engineering resources between maintenance and development of the operational system and the work required to document and release these additional software assets in our open source project.</p>		
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID’s own principles and values.</p> <p>We note that as modern software development practices increasingly make use of proprietary managed PaaS (Platform as a Service) offerings from the major cloud infrastructure vendors in order to increase development efficiency and throughput, the ability to make the software available in a form that can easily be deployed and replicated by a third party is likely to get more difficult.</p>		

POSI Principle	Open data (within constraints of privacy laws) – For an infrastructure to be forked (reproduced), it will be necessary to replicate all relevant data. The CC0 waiver is the best practice in making data openly and legally available. Privacy and data protection laws will limit the extent to which this is possible.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s 7th Founding Principle states, “All data contributed to ORCID by researchers or claimed by them ... (subject to the researchers’ own privacy settings) [are] released under a CC0 waiver.” Our 6th Founding Principle states, “Researchers will control the defined privacy settings of their own ORCID record data.”</p> <p>In practice, this means that we release an annual public data file that includes all public ORCID record data (per record holders’ privacy settings) under the CC0 Waiver as further described below.</p>		
<i>Commentary</i>	<p>This POSI Principle resonates strongly with ORCID’s own principles and values.</p> <p>We note, however, that recreating the ORCID service as is, as opposed to an ORCID-like service, would not be possible without access to the record holders’ email addresses, passwords and other user and integrator security information. To maintain both the security of ORCID and the privacy of our users, it is impossible to publish this information openly. It is possible, however, that this data could be transferred to a successor organization, with suitable assurances, as part of an orderly wind-down process.</p>		

POSI Principle	Available data (within constraints of privacy laws) – it is not enough that the data be “open” if there is no practical way to obtain it. Underlying data should be made easily available via periodic open data dumps.		
<i>Compliance</i>	Highly Compliant	<i>Relevance</i>	Highly Relevant
<i>Self assessment</i>	<p>ORCID’s 7th Founding Principle states, “All data contributed to ORCID by researchers or claimed by them will be <u>available in standard formats</u> for free download (subject to the researchers’ own privacy settings) <u>that are updated once a year</u> and released under a CC0 waiver. As previously noted, Our 6th Founding Principle states, “Researchers will control the defined privacy settings of their own ORCID record data.”</p> <p>In practice, this means that we release an annual public data file that includes all public ORCID record data (per record holders’ privacy settings) via a third-party data repository, FigShare. The data file is released in standard formats (as a set of XML files archived into gzipped tarballs), and we provide documentation on our XML schema, as well as an open source utility to convert the XML files into JSON.</p>		

	Public ORCID record data is also freely available in the ORCID Registry website and is machine accessible via our public APIs and content negotiation service.
<i>Commentary</i>	This POSI Principle resonates strongly with ORCID’s own principles and values. We note that in order to meet the desired outcome of this principle, i.e. that it should be possible for another party to replicate the services of the subject infrastructure organization, it is not sufficient for an infrastructure organization to simply self host the data, as its availability would be in jeopardy if the organization had failed or its sustainability were in doubt. It is essential that the data should be deposited with a third party, preferably one that has its own plans for long-term sustainability and preservation. This is not, however, explicitly spelled out in the principle.

POSI Principle	Patent non-assertion – the organisation should commit to a patent non-assertion policy or covenant. The organisation may obtain patents to protect its own operations but not use them to prevent the community from replicating the infrastructure.		
<i>Compliance</i>	Minimally Compliant	<i>Relevance</i>	Partly Relevant
<i>Self assessment</i>	While ORCID has not sought patents for any of its software, and asserting patent rights to bar third-party use would be incompatible with our Value of Openness , we do not have a formal patent non-assertion policy in place. We also don't have any policy (and have not had the need) to prevent third parties from asserting patent rights over any aspects of our technology or services that may be patentable. This is something we should address.		
<i>Commentary</i>	<p>While this principle resonates with our values, it is not currently clear how much of a risk patent claims would present to our services, and therefore how much effort we should invest in addressing this issue.</p> <p>Nor is it clear to us whether the intent of this principle is simply to ensure that a subject infrastructure organization does not assert proprietary rights over its own technology and services in a way that inhibits their openness, or whether it is also the intent that the infrastructure’s openness should be be defensible against third-party patent claims. If the latter, then it would likely be necessary for the organization to obtain and defend its own patents in order to be able to protect the community from third-party claims, something which could be very costly and potentially beyond the reach of most scholarly infrastructure organizations. Further, we note that the plain text of the principle implies that the organization has indeed obtained patents that it then commits not to assert.</p>		