



Internet of Production
Alliance

IOP APRIL COMMUNITY CALL:

The Journey of Open Know-Where

13TH APRIL 2023, 14:00PM – 15:00PM UTC

REGISTER HERE: shorturl.at/xLPWX



ALFRED P. SLOAN
FOUNDATION



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Agenda

- Welcome / IoP Alliance Updates
- Mapping global manufacturing capabilities with Open Know-Where: how it started, where we are now, what we have learned
- Next Steps and Community Involvement with OKW

Community Notes

bit.ly/3KRSeWy





IoP Alliance Community Updates

Recent changes, upcoming programming, and events

Updates on the IoP Alliance



- Innovative Manufacturing in Africa (IMA/RISA)

- Africa European Maker Innovation Ecosystem (mAkE)

- OKW Manufacturing World Map Data Awards, Awardees



Updates on the IoP Alliance

- Ongoing Work on IoP Alliance governance 2.0
<https://community.internetofproduction.org/c/governance-processes/9>
- Data portability ongoing work/development of tooling

CS&S

**Code for
Science
& Society**



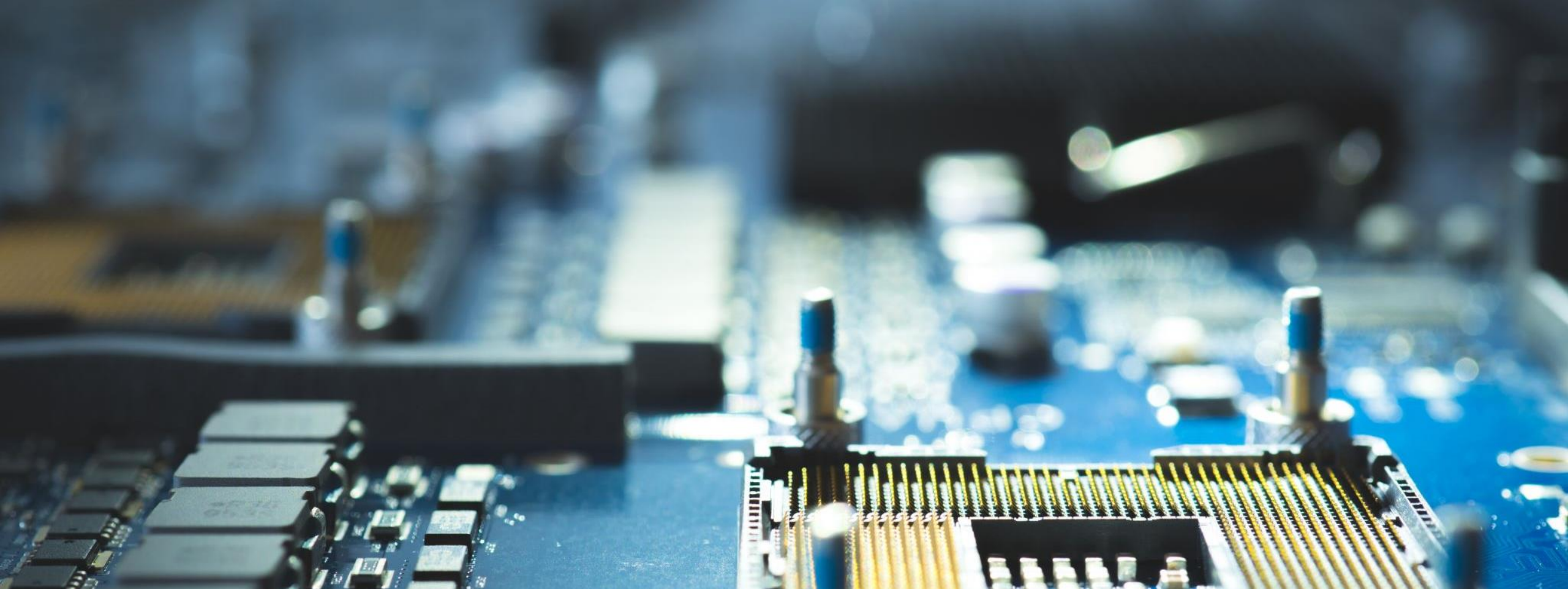
OPEN SOURCE ECOLOGY



What's Next with the IoP Alliance



- OSHWA Annual Gathering
<https://2023.oshwa.org>
- IMA/RISA Kickoff Call
- IoP Governance Task Force Call
- Makerspaces and Distributed Manufacturing Business Models on Apr 19
- Persona Workshop with Dana "Doc" Martens on May 6th <https://danamartens.tech>



The Journey of Open Know-Where (OKW)

Overview of the genesis of OKW, community use cases, and what we've learned

IoPA: Open Know-Where



Summary: Define a mapping standard for documenting and sharing information about the location of manufacturing capabilities globally.



Purpose: Make it easier to discover mapping initiatives and mapping requirements within the maker community.



Working Groups: <https://community.internetofproduction.org/c/okw/13>



Initiative Overview:
<https://www.internetofproduction.org/openknowwhere>

Where the OKW Journey Started

Specification goals

Make it easier to discover mapping initiatives and mapping requirements within the Maker community.

Improve discovery and accessibility

Improve the discovery of manufacturing facilities, equipment and capabilities within the manufacturing industry and maker communities.



Current Projects

MAKE



- European H2020 project focusing on hardware-focused Digital Innovation Hubs (DIHs): makeafricaeu.org/about

SLOAN



- Project goal(s): Gathering and mapping global manufacturing data points (150,000 points of interest)
- OKW Data Awards introduced December 2021
 - Purpose and intent of awards, R1; R2
<https://www.internetofproduction.org/news/okw-manufacturing-world-map-data-awards>



OKW Community Story

Mapping Makerspaces in Latin America: Dr. David Jaime Castillo Cornejo; Glyxon Labs, ASU

Mapping the Digital manufacturing capabilities across Latin America OKW-1



David J, Castillo PhD

ASU /Glyxon (Lead)



Greg Merritt B.Sc.

Glyxon (Microbiology Researcher)



Structured survey

NOMBRE DE LA ORGANIZACION *

Nombre

Denominación social (si la tiene)

NOMBRE DEL RESPOSABLE (Director, fundador, presidente, etc.) *

Nombre

Otros nombres

Apellidos

EDAD

ex: 23

GENERO

Please Select

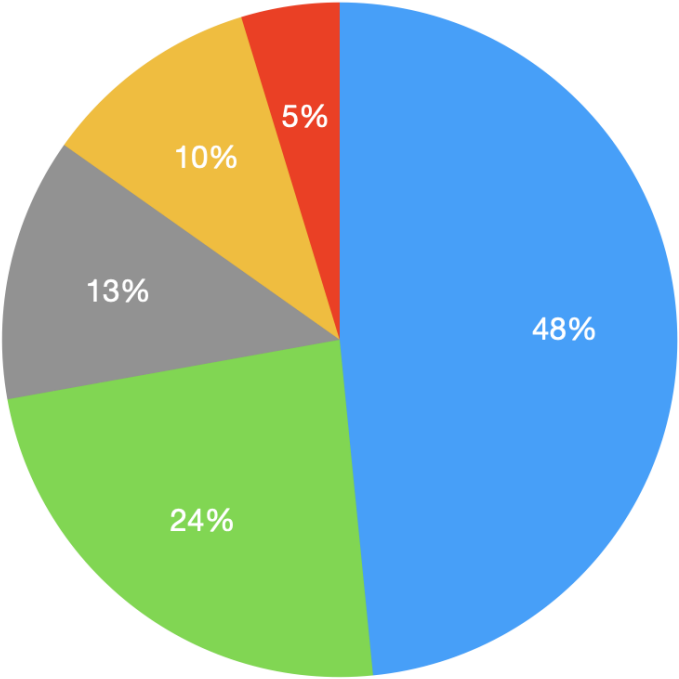
DIRECCIÓN DE LA ORGANIZACIÓN *

Calle, numero exterior

Numero interior

Categories breakdown

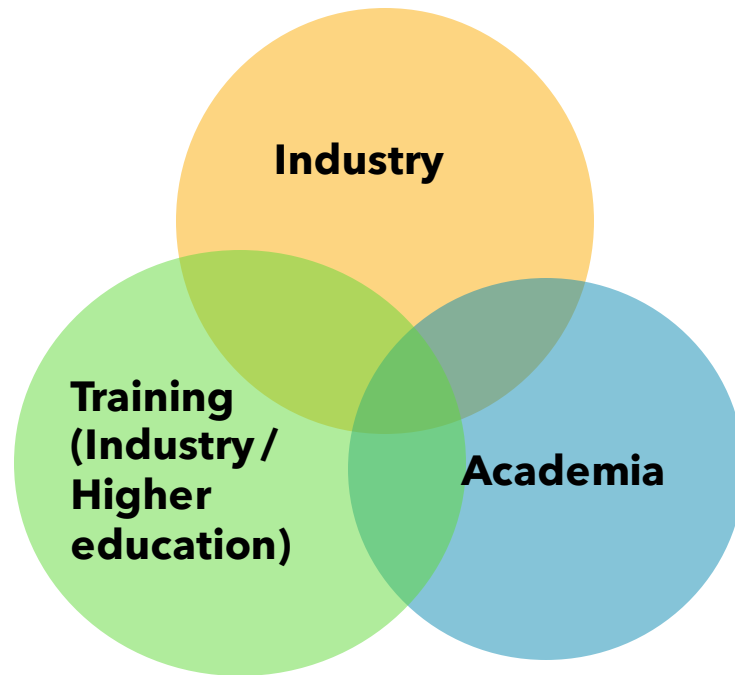
3D Laser CNC Fablabs PCB



Overlapped distribution to be studied

689 points for 3D Printing
830 points for Laser/Plasma cutting
443 points for CNC and Routers*
366 points for FabLabs and MakerSpaces
167 points for PCB and printed electronics manufacture*
TOTAL: 3,495 entities

Some useful findings



Alberto Sánchez

Antonio Quirarte

Norman Morales
Ohms 330

Marco Butrón
Proyectil

Eden Candelas
Paradoxa Labs



Challenges of Digital Manufacturing Spaces

Memberships: “niche”, very small community.

Lack of awareness: Not many know what to do with those tools and their potential (potential users).

No regulatory frameworks: These spaces are not considered work areas or proper business (insurance companies can not define them).

People don't know about the existence of these labs and technologies or their transformative potential.

Lack of funding (either public or private*).

Lack of interest from authorities (awareness).

Ease importation and fiscal issues.

Lack of business training.

No exponential growth.

EXPENSIVE FACILITIES: 2-3 years avg. lifespan of an independent Makerspace (Fablabs have a different funding process).



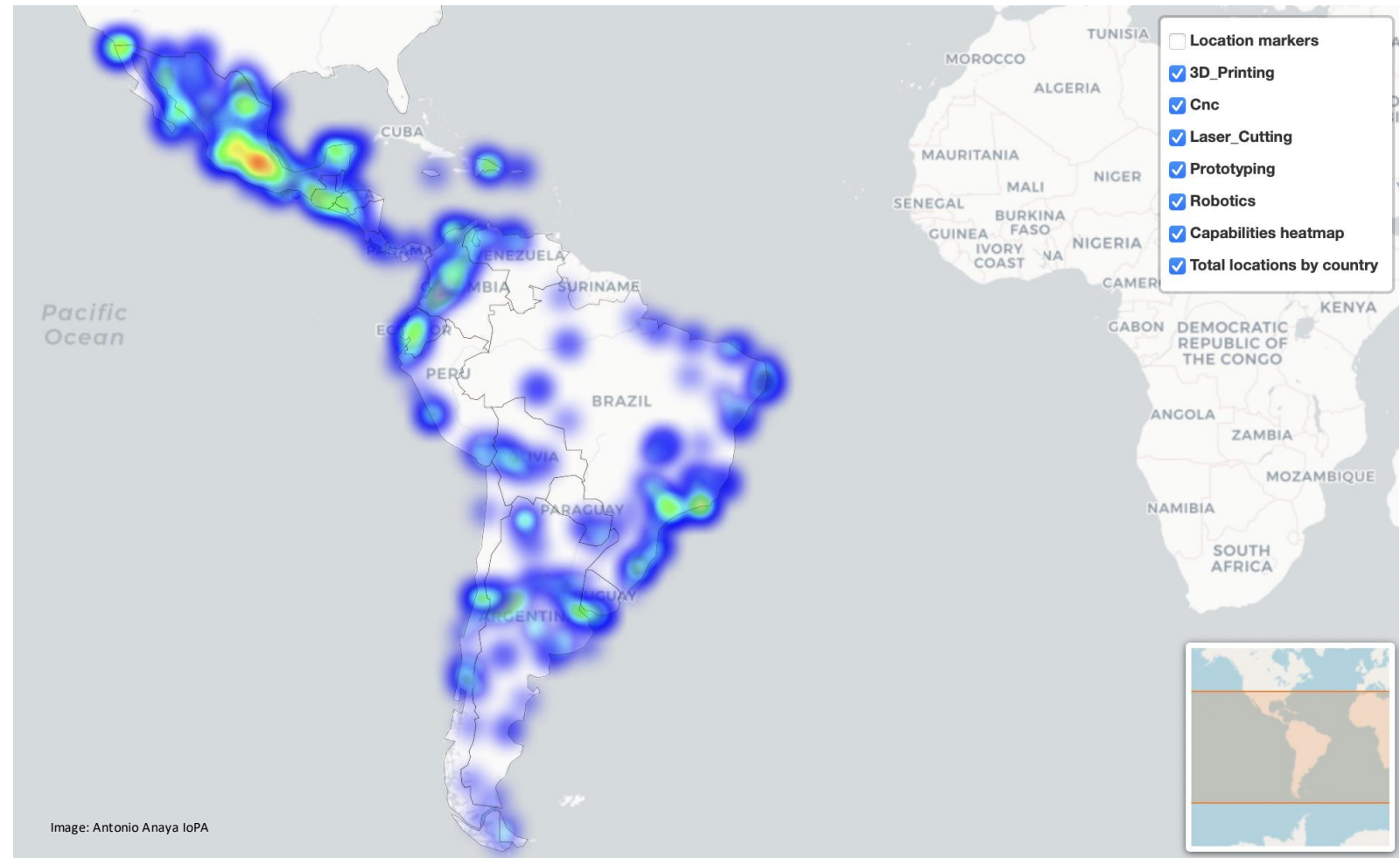
Heatmap of Digital production technologies

Put in perspective the Where and How much?, but also How well connected

What for?

Underestimated data, new categories:

- Large scale Industrial Machining
- Plastic injection or molding
- Fabric or clothing with a level of automation
- Stoneware, automated ceramics or Composites production
- Aerospace



Expanding Digital Production Technologies Machines map: mAkE



Scan to access the map on your device.

Insert Web Page

This app allows you to insert secure web pages starting with https:// into the slide deck. Non-secure web pages are not supported for security reasons.

Please enter the URL below.

https:// kny5.github.io/data_reports/reports/proto_01.html

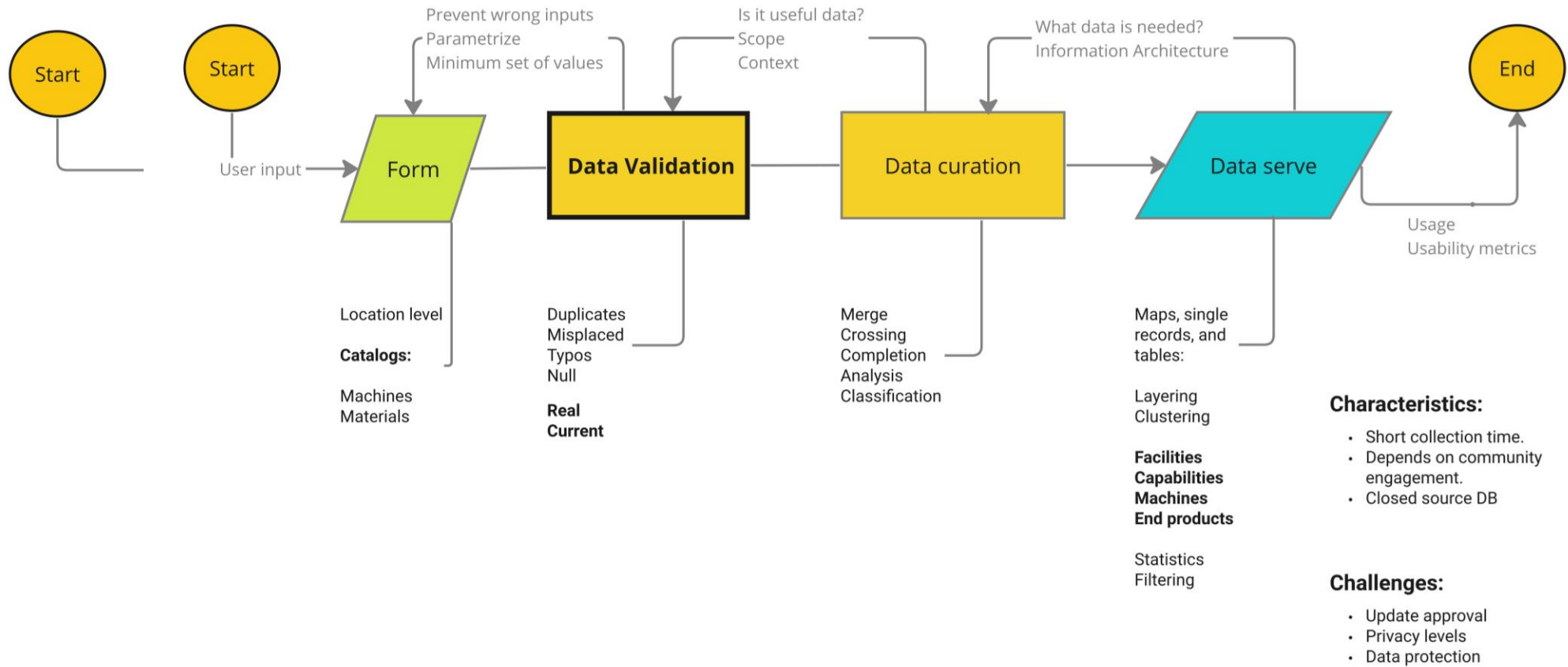
Note: Many popular websites allow secure access. Please click on the preview button to ensure the web page is accessible.

Preview

Web Viewer [Terms](#) | [Privacy & Cookies](#)

How does it work?

mAkE map of machines, Single record, Workflow





OKW Data Awards R2: Updates and the New Cohort

Learn What Has Changed and Who is Currently Involved in Mapping Manufacturing Capabilities Around the World

OKW Manufacturing World Map Data Awards: R2

LESSONS LEARNED FROM R1

- Structure for awardee support and information sharing needed
- Build out and increase suite of tools for data collection and visualisation
- Need to get broader IoPA community engaged in discussion of ongoing projects
- Educational content for community members/volunteers collecting data must be added as component

CHANGES APPLIED TO R2

- New cohort channel on community forum for information sharing and networking: bit.ly/OKW_R2
- Schedule of check-in meetings established
- Kobo Toolbox Training sessions
- R2 Toolkits and Requirements on community forum: bit.ly/OKW_R2_Toolkits
- Applied to data collection orientation: recommendations on formatting, addition of photographic evidence, application of data privacy and ethical collection to community engagement and training



Meet the OKW R2 Awardees!

Follow their work/progress on
the IoPA Community Forum:

bit.ly/OKW_R2



Mapping Manufacturing Capabilities Across Nigeria: Edu4All Team



ABDULWASIU TIAMIYU
(he/him) - *Technical lead*



BOLAJI AKOREDE
(he/him) - *Team Lead*



OLUWATOBI (O'GREAT)
FAKOYA (he/him) -
Quality Assurance Specialist



SULEIMAN ABDULSALAM
(he/him) -
Project Coordinator

Mapping Manufacturing Capabilities of Makerspaces in Greece



SPYROS NOMPILAKIS
(he/him) - *Project Lead*

Mapping Machinery Capabilities in Cameroon: Yaounde and Doula



STEPHANE FADANKA
(he/him) - *Project Lead*



NEXT STEPS AND COMMUNITY INVOLVEMENT

What comes next for OKW, and how can the community get involved?

Community Discussion

bit.ly/3KRSeWy



OKW Storytelling: What Do You Need?

https://padlet.com/m_wardeh/okw





Prospects for OKW Initiative: Use Cases

Looking toward where we go next with OKW

What is Next for OKW: Use Cases

OKW Current Status

- Focused on inventory,
- Does not include processes,
- Does not including inventory-to-process mapping.

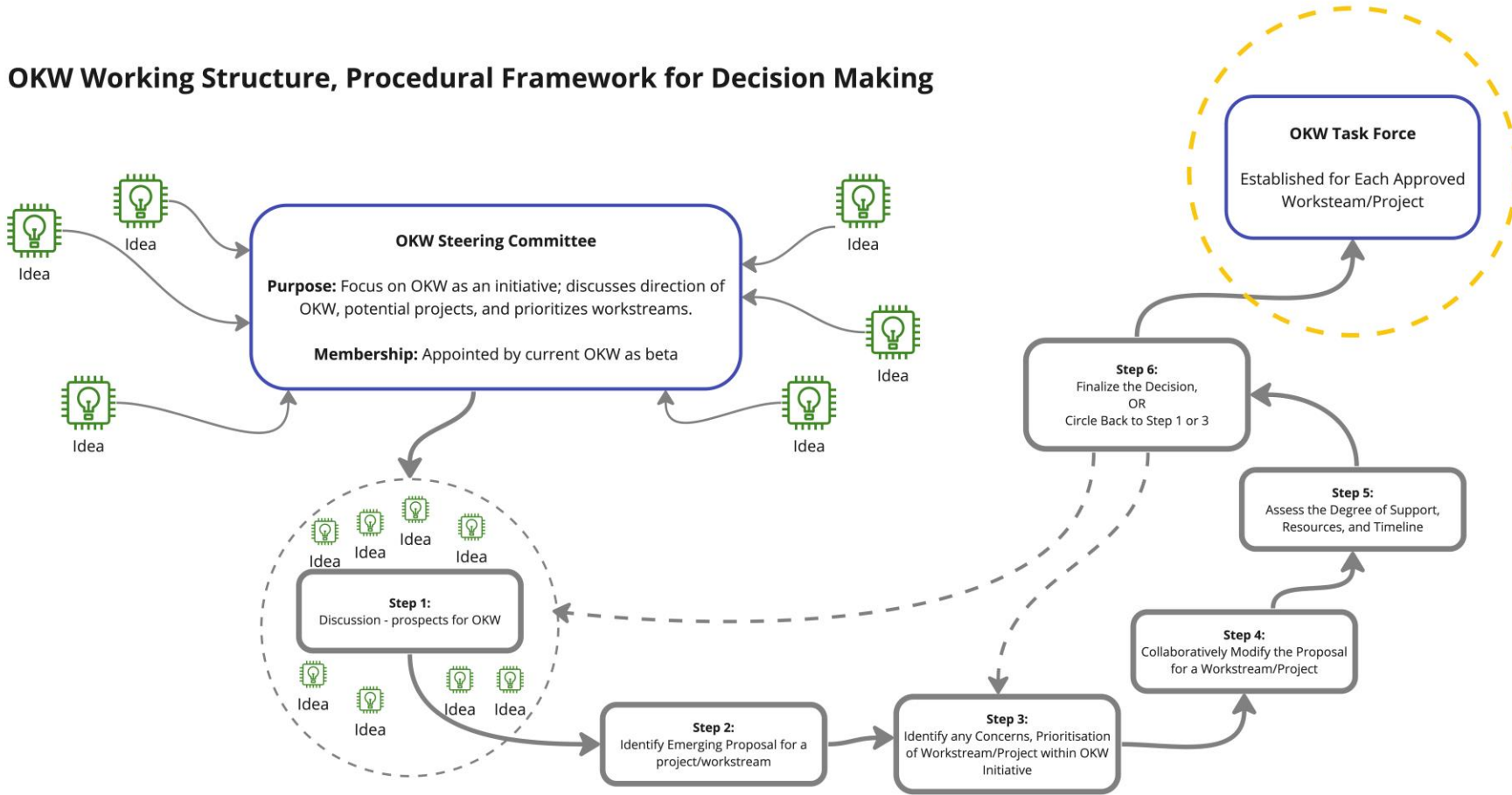
Where to Move Next

- How important, overall, is inventory vs knowledge of capabilities?
- When would you need to know the process and capability, as opposed to the make/model of the machine?

What are **use cases** where you would need to know **process** and **capability**, as opposed to the make/model of the machine?

How to Get Involved in OKW

OKW Working Structure, Procedural Framework for Decision Making



Opportunities/open calls to **join a task force** focusing on specific projects will be posted to the OKW Channel on the IoPA Community Forum:

bit.ly/OKW_Community

New ideas can also be posted directly/shared on this channel and will be discussed by the Steering Committee.

Thank you for joining us



Please get in touch if you have any questions or queries:

Twitter: @IoP_Alliance, @openknowhere

Email: info@internetofproduction.org

Join our community discussion:

<https://community.internetofproduction.org>