

Digital Transformation Center Rwanda

# Quarterly Progress Report

April to June 2022

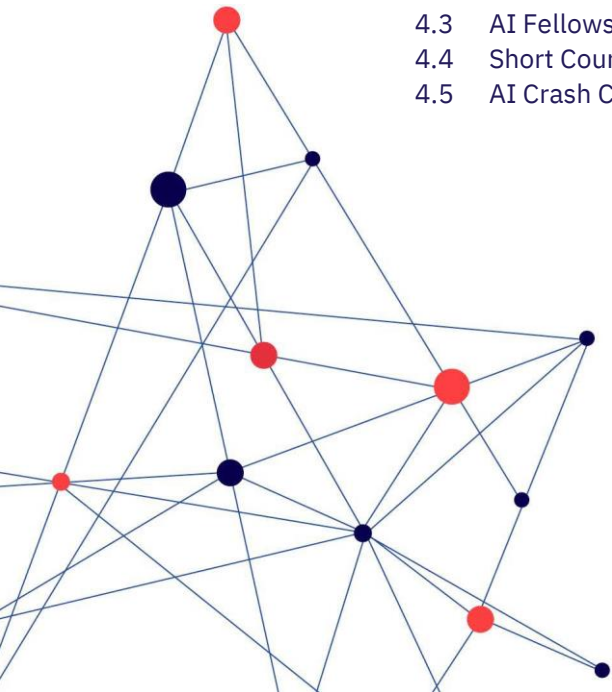


Implemented by  
**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



# Table of Content

<b>Introduction</b> .....	<b>3</b>
<b>1 Policy Development &amp; Dialogues</b> .....	<b>4</b>
1.1 National Strategy for Digital Inclusion .....	4
1.2 National AI Policy .....	4
1.3 AI Maturity and Readiness Assessment Framework .....	4
1.4 Ethical AI Guidelines .....	5
1.5 Startup Act.....	5
1.6 Rwanda Smart City Strategy 2.0.....	5
<b>2 Solutions &amp; Innovation</b> .....	<b>6</b>
2.1 ii2030 Rwanda Smart City Edition.....	6
2.2 Smart Waste Management Platform .....	6
2.3 Zindi Machine Translation Hackathon .....	7
2.4 Landslide Monitoring Pilot .....	7
2.5 Facilitation of Tax & Legal Advisory Support for Business Angels Rwanda .....	7
2.6 User-centered Design Research for Machine Translation Use Cases .....	8
<b>3 Ecosystem</b> .....	<b>9</b>
3.1 Artificial Intelligence / Natural Language Processing Community of Practice .....	9
3.2 Voucher System.....	9
3.3 Open Innovation Programme .....	9
3.4 Smart Cities Innovation Programme .....	10
3.5 Support to the Rwanda Startup Fund .....	10
3.6 Smart City Lab / Digital Innovation Hub .....	10
<b>4 Digital Literacy &amp; Capacity-building</b> .....	<b>11</b>
4.1 Digital Literacy Trainings .....	11
4.2 Website Accessibility Assessment of Government Websites .....	11
4.3 AI Fellowship.....	12
4.4 Short Course for Machine Translation Basics for Translators/Interpreters .....	12
4.5 AI Crash Course for Policy Makers .....	12



# Introduction

This quarter, we decided to include all DigiCenter projects in the reporting. This means we can now better address our focus topics of Smart Cities, Artificial Intelligence, Digital Inclusion and Ecosystem-building to keep you up to date.

## **Smart Cities:**

Here we keep track of all the important activities that contribute to smart cities and communities in Rwanda. This time, we would like to highlight:

- [Rwanda Smart City Strategy 2.0](#)
- [ii2030 Rwanda Smart City Edition](#)

## **Artificial Intelligence:**

Here we record all the important activities in the area of AI such as Machine Translation, Natural Language Processing and others. As highlights we would like to mention:

- [AI Fellowship](#)
- [User-centered Design Research for Machine Translation Use Cases](#)

## **Digital Inclusion:**

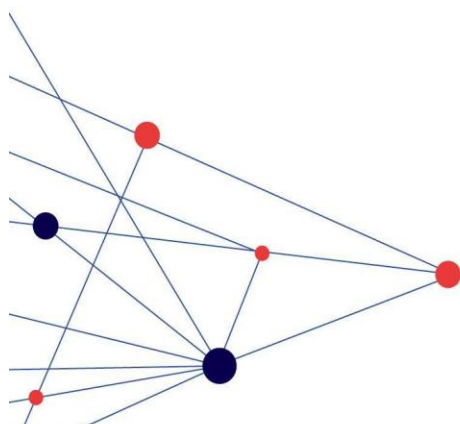
Here we record all important activities in the area of digital inclusion and digital literacy in order to contribute to the integration of vulnerable groups in the digital transformation. This time, we would like to highlight:

- [National Strategy for Digital Inclusion](#)
- [Digital Literacy Trainings](#)

## **Ecosystem-building:**

Here we record all important activities in the area of building the tech ecosystem, which includes topics such as startup promotion and networking. As highlights we would like to mention:

- [Voucher System](#)
- [Open Innovation Programme](#)





# Policy Development and Dialogues

## 1.1 National Strategy for Digital Inclusion

The Government of Rwanda is seeking to develop a digital inclusion strategy as an instrument to ensure effective implementation of the principal of “leaving no one behind”. Rwanda’s digital inclusion strategy will establish a holistic approach to bridge the digital divide in its different forms and enable a streamlined framework for coordinated efforts and investments towards citizens’ digital participation. During this quarter, the following milestones could be achieved:

- Completion of field visits and data collection
- Validation focus group discussions with relevant sectors
- Validation workshop with stakeholders on initial findings and insights from primary data.
- Mid-term report containing statistics and parameters for Rwanda's digital inclusion state

## 1.2 National AI Policy

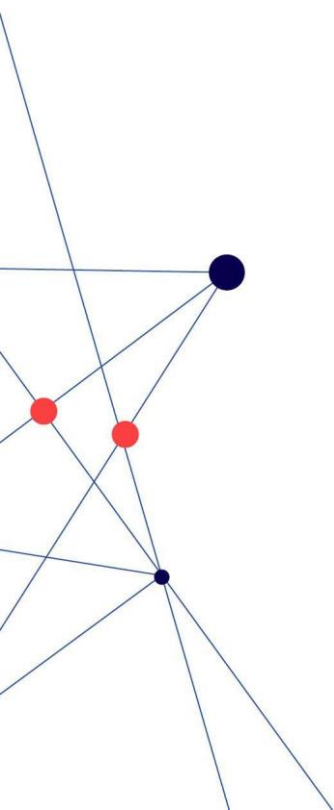
The AI Hub has been supporting MINICT and the Center for the Fourth Industrial Revolution in developing a National AI Policy which will enable Rwanda to harness the benefits of AI while mitigating the potential risks of this technology.

Over the past months, the team has worked with MINICT and C4IR to revise and finalize the implementation plan for the AI policy which includes concrete outcomes, outputs, indicators, activities, and responsibilities for policy implementation. Moreover, the team has developed a concept for the responsibilities and structure of the Responsible AI Office which will be tasked with coordinating the implementation of the AI Policy under the MINICT. A validation workshop has been prepared which will be held mid-July.

## 1.3 AI Maturity and Readiness Assessment Framework

The AI Hub, in collaboration with C4IR and MINICT has been working on the development of an AI Maturity and Readiness Assessment Framework. The framework aims to help Rwanda to systematically monitor the progress of the implementation of the National AI Policy, informing both policy interventions and investment decisions for the government as well as the private sector.

Over the past months, the team finalized the choice of indicators to be included in the framework and completed the data collection to establish a baseline. An interactive dashboard has been developed which will be available to the public to track progress in a transparent way. Moreover, the team has been working in preparing a final report including the methodology used to develop the framework, as well as insights gained based on the first round of data collection.



## 1.4 Ethical AI Guidelines

In partnership with RURA and The Future Society, the AI Hub had developed “Guidelines for the Guidelines on the Ethical Development and Implementation of Artificial Intelligence” which will guide developers and institutions on the ethical considerations to take into account when developing and using AI solutions.

Over the past months, the AI Hub has been supporting RURA in preparing for the validation of the guidelines by the RURA board. In addition, the AI Hub organized a workshop for the participants of the AI fellowship with the goal of introducing fellows to the concept of Ethical AI, exploring how open AI benefits ethical AI and how they can approach AI projects with an AI ethical lens. As a next step, the AI Hub, together with RURA will implement an awareness raising and capacity building programme for companies and start-ups on how to effectively use the guidelines. For this, the AI Hub has contracted the Finnish AI consultancy firm Saidot.



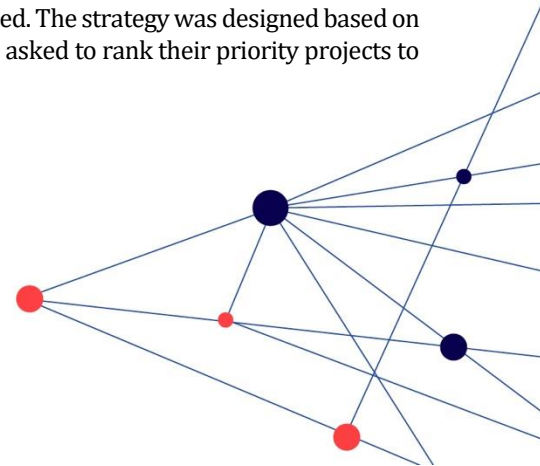
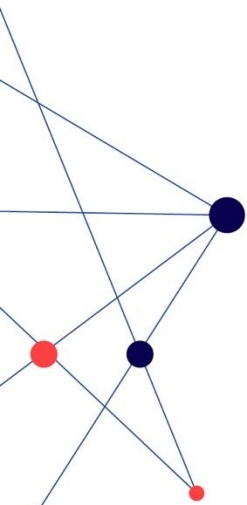
## 1.5 Startup Act

The startup act aims to facilitate startups comprising of incentives and interventions to drive startup growth. The draft law applies to Rwandan innovative firms and Entrepreneurship and Innovative Support Organizations. Currently, there has been amending and updating of the initial draft of the Act. Validation meetings with key government players and authorities have taken place to support on refining and gathering support behind the Act. Additional analyses such as benchmarking and review of tax incentives to solidify the analytical framework have been carried out.

## 1.6 Rwanda Smart City Strategy 2.0

Focus of the assignment was to add on the already existing Smart City Rwanda Masterplan and conceptualize 5 smart city interventions and turn them into actionable projects as well as to calibrate key governance choices to direct the development of the smart city ecosystem.

During this quarter, the smart city action plan detailing the conceptualization of smart wifi hotspots, a smart city control and command center, smart monitoring of urban water infrastructures, smart waste management solutions and a city service portal has been finalized. The strategy was designed based on a collaborative stakeholder approach where participants were asked to rank their priority projects to turn Rwanda into smart cities and communities.



# 2

## Solutions & Innovation

### 2.1 ii2030 Rwanda Smart City Edition

The Rwanda Smart City Edition of inclusive innovation 2030 addressed critical challenges Rwandan cities are facing in the context of climate change, digital transformation, resource scarcity, rising social inequalities and urbanization. Over the past few years, Rwanda has made strides in the smart city agenda, emerging as a regional leader. Endeava's ii2030 process catalyzes the use of technology for the achievement of Sustainable Development

Goals. To this effect this ii2030 edition comprised of three tracks: solid waste management, road safety, and air pollution (transport). Three phases took place which included: inception, consultation, and co-creation which resulted in one solution per track. Going forward, each solution will now undergo a detailed conceptualization process including outreach to potential partners and solution owners.



### 2.2 Smart Waste Management Platform

The Smart Waste Management System is developed with the aim of enabling the City of Kigali (CoK) to have a real-time and efficient approach to handling waste within the city. In addition, the Smart Waste Collection and Management Platform enhances regulated waste monitoring spots with fill-level sensors that provide additional information to waste management authorities as well as waste collection service providers by supporting on-demand real time waste collection. Project implementation is currently ongoing and is at the level of testing mobile compatibility for the web application.

In addition, web hooks have been implemented to support live transmission of data from the platform to other platforms such as GBIS.

## 2.3 Zindi Machine Translation Hackathon

This activity facilitates the data collection efforts for the machine translation component enabling the local and African data science communities to clean and curate parallel data for English-Kinyarwanda attained from web-crawled sources (OPUS Corpus). To be done in 2 phases, a physical hackathon in Kigali (8<sup>th</sup> & 9<sup>th</sup> July) and an online month-long competition for data augmentation, will be hosted on the Zindi platform.



**GIZ Kinyarwanda Text Cleaning Challenge**

Clean text data for machine translation tasks

**\$3500 USD**

german cooperation  
DEUTSCHE ZUSAMMENARBEIT

implemented by  
**giz**  
German Development Cooperation

Digital Transformation Center Rwanda

**ZiND!**

## 2.4 Landslide Monitoring Pilot

The project pilots an optical monitoring system to detect landslides in endangered areas, initially focusing on a site in Nyabihu District. In cooperation with MINEMA and the Rwanda Space Agency (RSA), the project aims at providing image data openly via the Geospatial Hub of RSA to enable further analyses by other stakeholders. Finally, capacity building and skills transfer to local stakeholders to operate the system are facilitated. Contracting has been concluded with the German company Hesotech GmbH and a kick-off meeting with stakeholders has been held. Furthermore, an agreement with RSA has been reached for use of the Geospatial Hub.

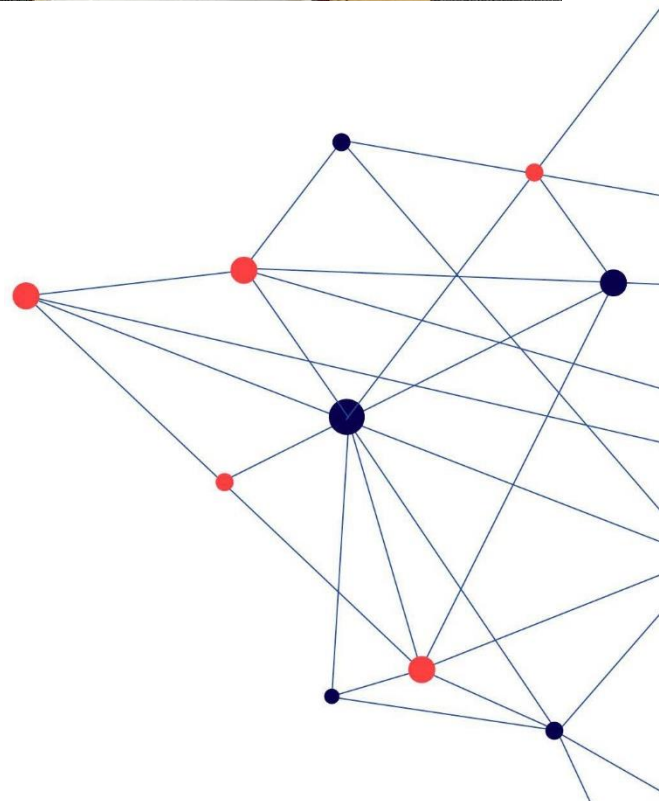
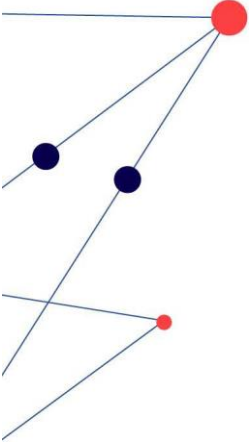
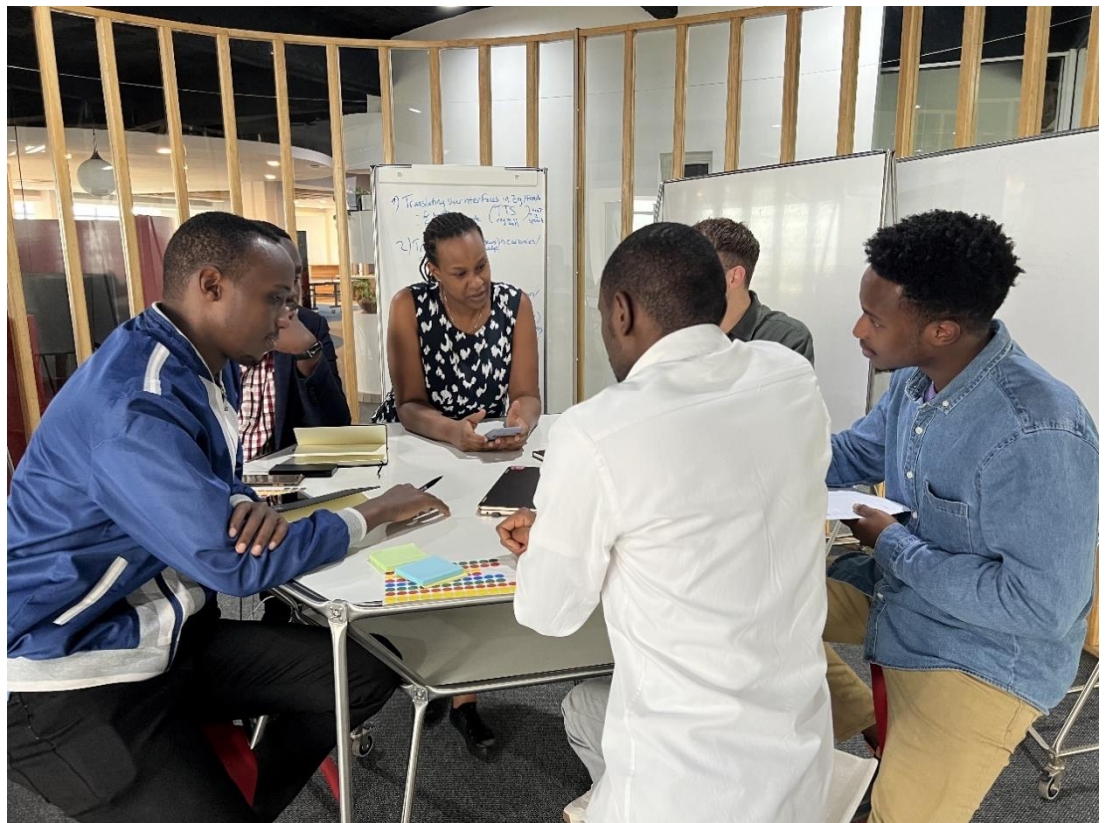
## 2.5 Facilitation of Tax & Legal Advisory Support for Business Angels Rwanda

During this quarter, the DigiCenter has supported the local angels network with formation, ongoing deals structuring, and investment instruments through templates and documents to support the network. Furthermore, investment instruments drafts have been shared for review, whereas deals support and formation of the network processes are still ongoing.

## 2.6 User-centered Design Research for Machine Translation Use Cases

Based on a human-centered design approach, the AI Hub aims to identify two use cases/solutions for machine translation that meet the needs of Rwandan citizens.

Together with the Kenyan company Made by People, the AI Hub has organized a first multi-stakeholder human-centered design workshop. Five potential use cases/solutions have been identified. In a next step, end-user research will be conducted to refine the use cases as well as develop and test non-technical prototypes. Two of these prototypes will be selected for further development.



# 3

## Ecosystem

### 3.1 Artificial Intelligence / Natural Language Processing Community of Practice

With our work on AI communities of practice, we aim to create places for knowledge sharing, learning, and joint development of AI solutions. In the reporting period, we have conducted two meetups focusing on Natural Language Processing, one having a more general look at chatbots and their applications in Rwanda, and the other presenting the technical aspects of chatbot development as well as voice recognition and synthesis.



In addition, we ran a strategy workshop to determine in a community-driven approach how these communities shall function. Furthermore, we have established WhatsApp and Slack channels for the NLP Community and made existing technology from the Mbaza COVID-19 Chatbot project openly available.

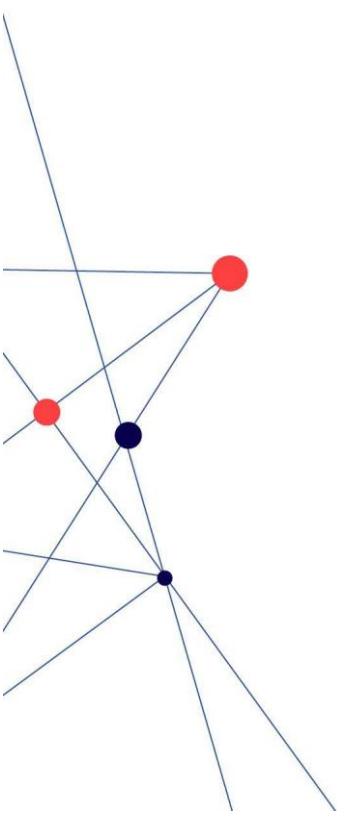
### 3.2 Voucher System

Broadly defined, a voucher system consists of fully paid-for services granted to SMEs/Start-ups with the aim of addressing pre-defined challenges/goals. The voucher system is meant to assess and advise on the individual needs of SMEs/Start-ups as well as the provision of consulting services by incentivizing the adoption of new technologies, services, and/or skills. In the second quarter of 2022, in collaboration with MAKE-IT as part of their Open innovation Program (OIP), 30 tech start-ups and SMEs were supported with their various product development challenges.

3 new services (Business Assessment advisory, Sales and Marketing Advisory, Finance and Tax Advisory) are being launched to the ecosystem. More details on this services can be found on <https://digicenter.rw/voucher-services/> and will run through 2022 to October 2023.

### 3.3 Open Innovation Program

The Open Innovation Programme embraces a problem-centric approach to support the market-readiness of innovative products. This is done by connecting startups with stakeholders and conduct capacity building for the founders. Our second version of OIP is supporting 15 startups in edtech, agritech and smart cities. It took shape during Q1-2022 and activities rate spiked during Q2 as we prepare for the demo day during Q3-2022.



### 3.4 Smart Cities Innovation Programme

The Smart Cities Innovation Programme is a Rwanda-focused pan-African accelerator supporting 30 scaling stage startups in Mobility, Fintech and Cleantech & Smart Housing. Q2-2022 saw the closure of the programme. A demo day showcasing products and services developed by the participating startups took place in June 2022.



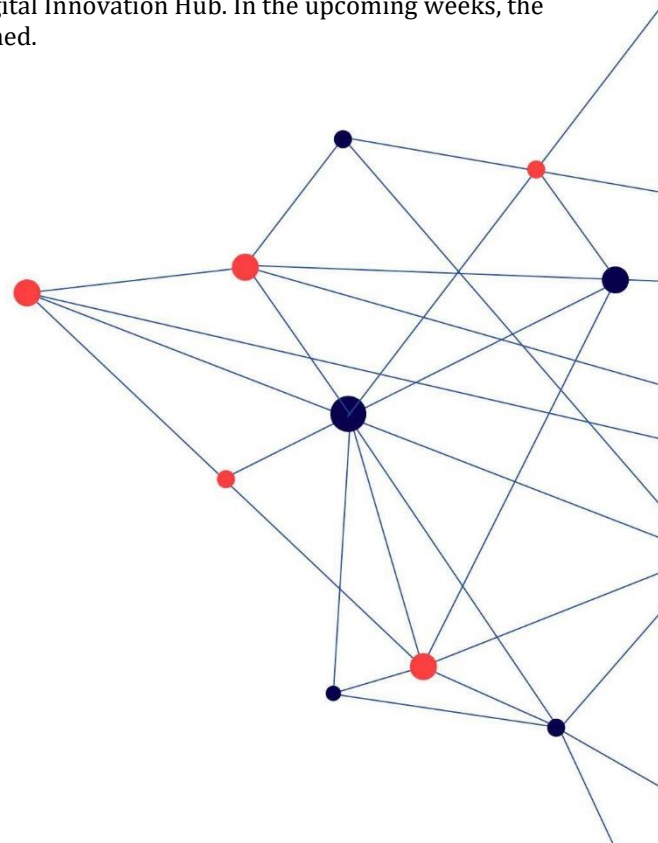
### 3.5 Support to the Rwanda Startup Fund

To support the Government of Rwanda to promote the topic of access to finance for startups; in line with the Hanga Pitch Festival 2021, we successfully managed to frame a contractual agreement with the fund manager, BID Capital, which is currently managing the Rwanda Startup Fund. A second contract for the BDS is expected to be signed later July 2022.

### 3.6 Smart City Lab / Digital Innovation Hub

During this quarter, MINICT, RISA and ICT Chamber have entered an agreement to establish a Digital Innovation Hub dubbed 'Smart City Lab', a one stop shop where actors in the smart city ecosystem (public and private) can collaborate to co-design solutions that aim to address urbanisation challenges, create impact and improve the lives of

citizens in Rwandan cities and communities through technology and innovation. For that purpose, representatives of the three consortium members have attended a training in Brussels to get insights how to setup and run this Smart City Digital Innovation Hub. In the upcoming weeks, the business model and services will be further defined.



# 4

## Digital Literacy & Capacity-building

### 4.1 Digital Literacy Trainings

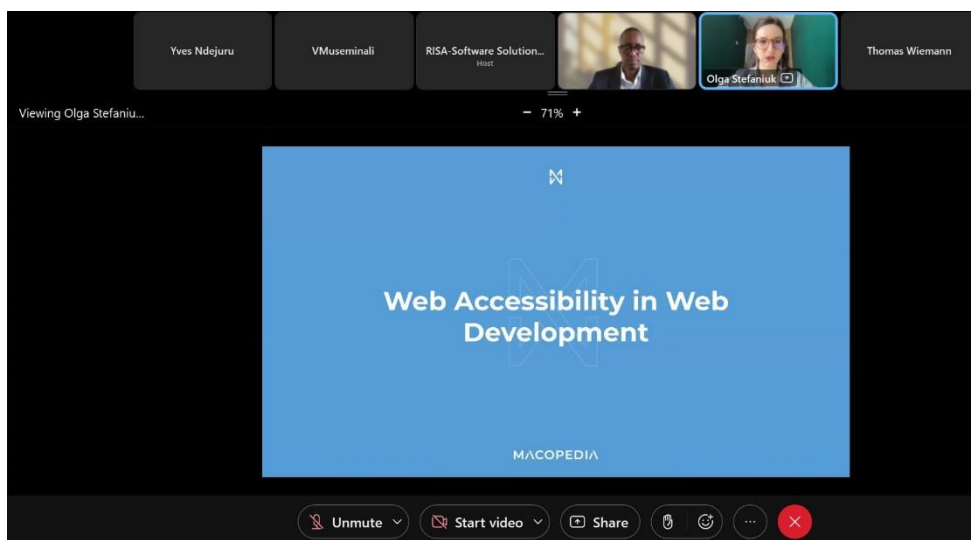
The overall goal of this activity is to close the digital divide by developing curricula for different vulnerable groups and provide digital skills training for 40.000 people living outside of Kigali, of whom 20.000 are women and 1.000 are people with disabilities. The trainees should not only listen in during the trainings but also apply their knowledge directly. The aim is that 70% of the trainees confirm that they have used three new digital services within four months after the training. During this quarter, the following milestones could be achieved:

- Supporting RISA to continue to mobilize and deploy 100 Digital Ambassadors (DAs) across the country. The retained DAs shall work closely with RISA and the municipalities in which they are deployed, to train citizens in accessing Irembo as well as other digital services, like e-Health, e-Agriculture, e-Commerce, mobile financial services, mobile banking services and e-Business services.
- Working with the ICT Chamber, REB, One Acre Fund, and other organizations to support digital trainings for farmers, teachers, and entrepreneurs.

### 4.2 Website Accessibility Assessment of Government Websites

People with disabilities often need assistive technologies, such as screen readers, as well as accessible content on websites to get access to services. Especially government websites and essential services for citizens should therefore be accessible to all. For that purpose, the DigiCenter hired Awesomity Labs and Seeing Hands to conduct a technical assessment of six government websites to rate their accessibility for people with disabilities. As part of the assignment,

a webinar was hosted inviting website owners, developers and content creators to learn more about Web Content Accessibility Guidelines (WCAG).





## 4.3 AI Fellowship

The AI Fellowship is a Leap Labs initiative in partnership with IBS Stiftung, and Chemnitz University of Technology in Germany supported by the AI Hub. The fellowship aims to strengthen local technical know-how by bridging the gap between the academic knowledge acquired in school to the skills required for a professional career in AI.

Recently, the second cohort with 30 fellows has concluded a 3-months training on AI. The fellows have been paired with 7 industry companies and government institutions to begin a 3-month professional internship. Collaboration among major stakeholder institutions such as RURA,

RCAA, Zorabots, BSC, RBC, Future earth, and others is to explore career opportunities and contribute to the increase of the technical knowledge in deploying and developing AI solution.

The AI Hub Rwanda has also started the process for another round of the successful fellowship concept, focused on NLP/MT fellowship which will focus on Natural Language Processing (NLP) in areas of machine translation and conversational chatbots.

## 4.4 Short course for Machine Translation Basics for Translators/Interpreters

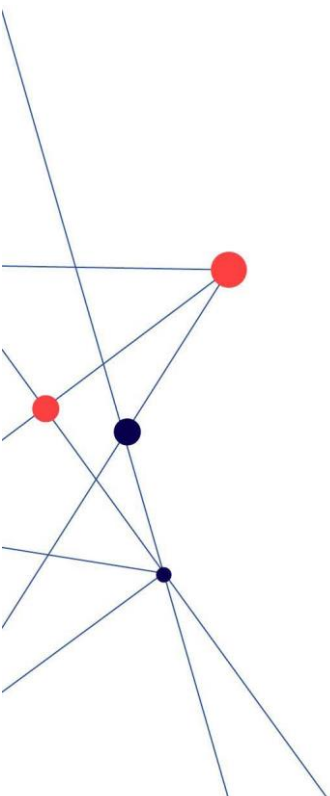
The goal of this practical hands-on short course is to upskill translators, interpreters, and students in the field of machine translation and to equip them with knowledge to support the linguistic facets of building a functional machine translation pipeline by providing practical hands-on modules.

Together with the University of Rwanda – School of Arts and Languages and an international service provider, the AI Hub will develop and pilot a short course for machine translation basics for translators/interpreters. An open tender for the creation of the course, running the pilot and ensuring the knowledge transfer and integration into the university's curriculum has been published. Moreover, an MOU with UR has been submitted for signature.

## 4.5 AI Crash Course for Policy Makers

The AI Hub, together with the Human Sciences Research Council (HSRC), implemented a capacity building and peer-learning programme for AI policy makers from Rwanda, Kenya, Uganda, South Africa, Ghana and India.

As part of the programme, the team, in partnership with RURA, organized a crash course on AI for Rwandan government officials from different sector ministries, including agriculture, education, health, and commerce. 37 officials successfully completed the week-long course which covered topics including AI ethics, data governance, AI use case development and AI strategies.







# Imprint

Digital Transformation  
Center Rwanda

Email: [dtc-rwanda@giz.de](mailto:dtc-rwanda@giz.de)

 <https://www.facebook.com/DigiCenterRW>

 <https://twitter.com/DigiCenterRW>

