

Africa Regional Centers of Excellence (ArcX) on Climate Change Resilience

Motivation, Activities, and Stakeholders

On behalf of ECMWF's ArcX team

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ECMWF – Who we are



Intergovernmental Organisation Established in 1975

- 23 Member States
- 12 Cooperating States
- 550+ staff



24/7 operational service

- Operational NWP – 4 x ENS forecasts / day
- Supporting National Weather Services, Research Institutes & Businesses globally



Research & Innovation

- Experiments to continuously improve our models
- Reforecasts and Climate Reanalysis
- ML/AI development: AIFS, Anemoi, FIAB

Copernicus Services

- Climate Change Service (C3S)
- Atmosphere Monitoring Service (CAMS)
- Support JRC on Copernicus Emergency Management Service (CEMS)



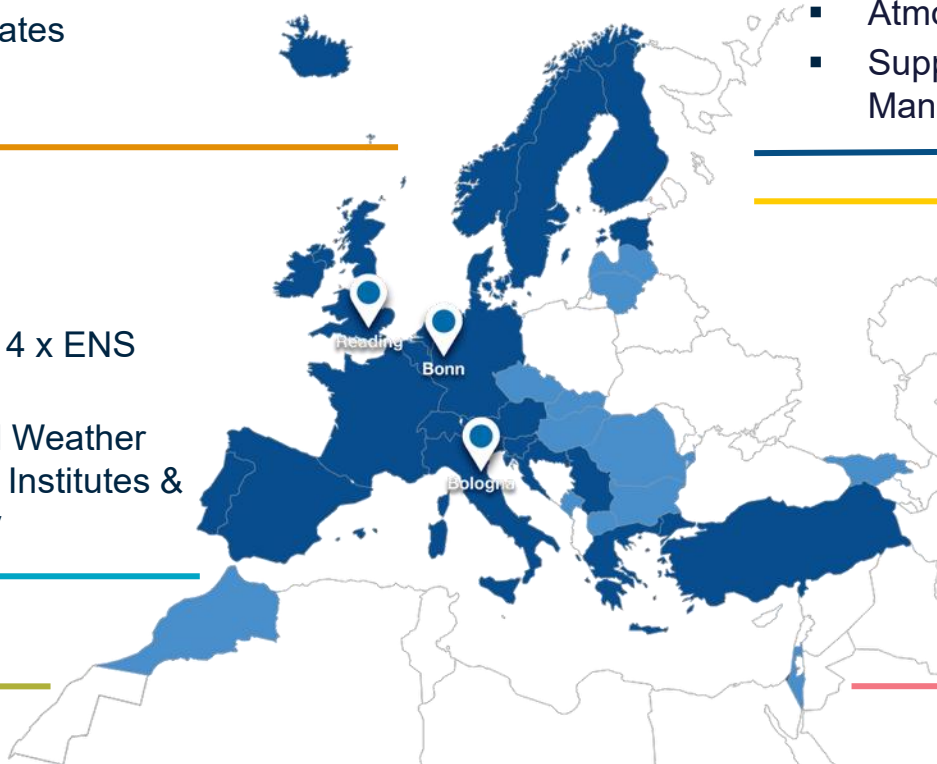
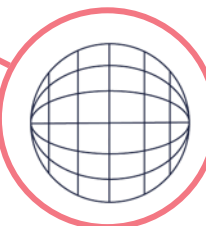
Global Gateway Partnerships

- Africa-EU Space Partnership Programme: Strengthening Early Warning in Africa (SEWA)
- African Regional Centres of Excellence (ArcX) on Climate Change Resilience



Destination Earth

- Operates the DestinE Digital Twin Engine (DTE)
- Operates two Digital Twins



ECMWF ArcX ROADMAP

2026–2029

01 Programme Setup

Recruit staff
Set-up governance

03 Selection of RCoEs

Criteria definition
& selection

05 Data Ecosystem

AI-ready datasets
& data capacity

07 Training

AI tools &
forecasting
workflows

09 Sectoral Demo Cases

Centers linkage &
impact

02 Scoping

Stakeholder
engagement
&
Outreach

04 Strengthen RCoEs

Build hubs · foster
twinning

06 Technology Deployment

FIAB pilot
deployment

08 Innovation & Research

Challenges,
partnerships &
demos

10 Integration & Sustainability

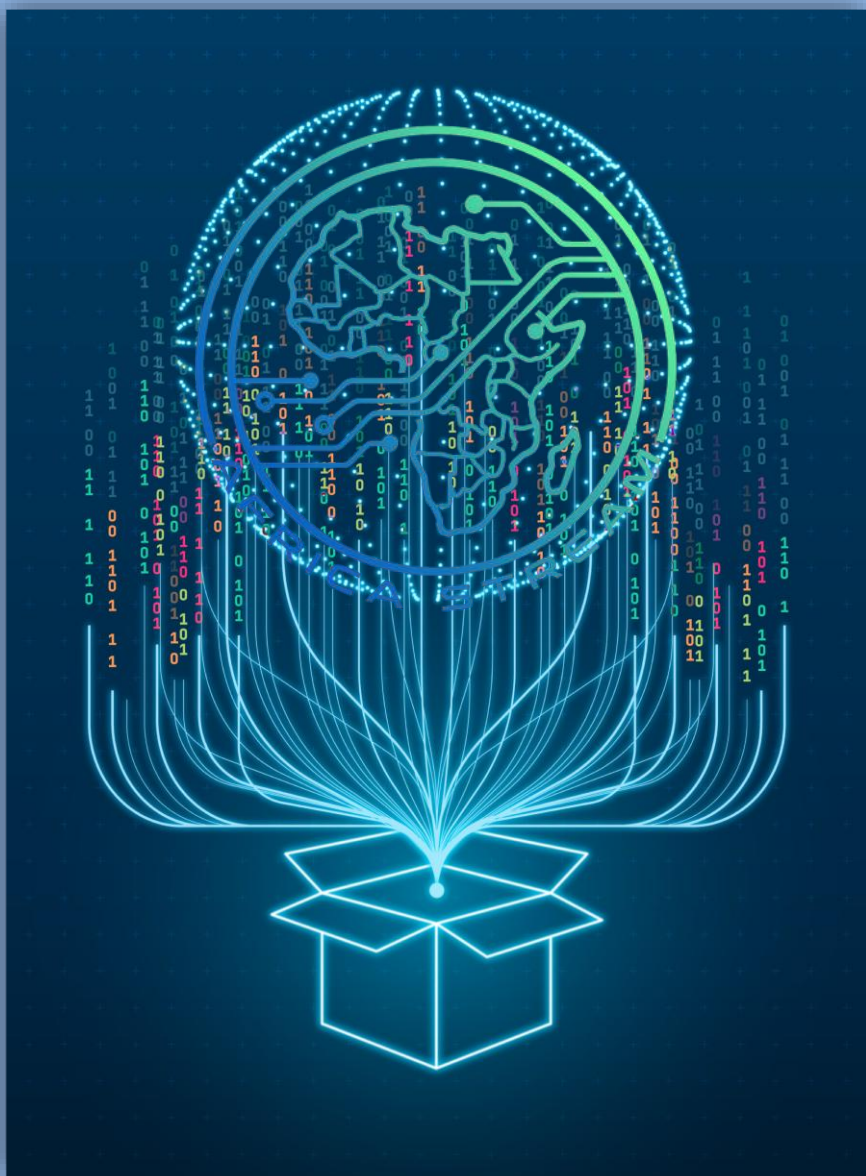
Institutionalise ·
scale · integrate



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Designate Regional Centres to produce tailored forecasts

Strengthen already designated WMO Centres
Designation through an open call



Advance FIAB to the sub-seasonal to seasonal scale

Make data AI ready
Set up, training and verification



Demonstrate Impact

Sectorial Impact
Science Impact
Political Impact



Training and Innovation

AI Weather Quest
Code for Earth
Train the Trainer

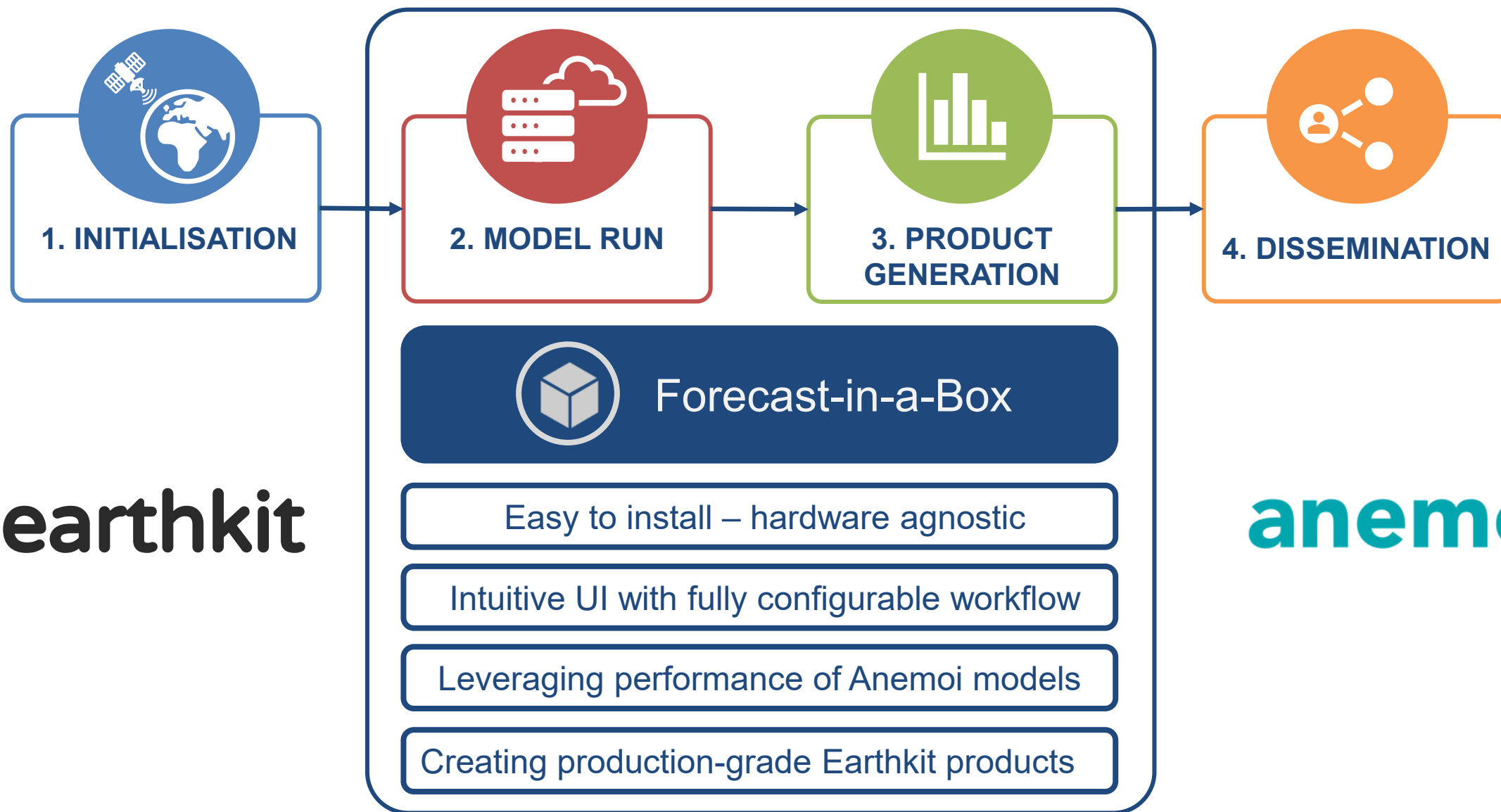


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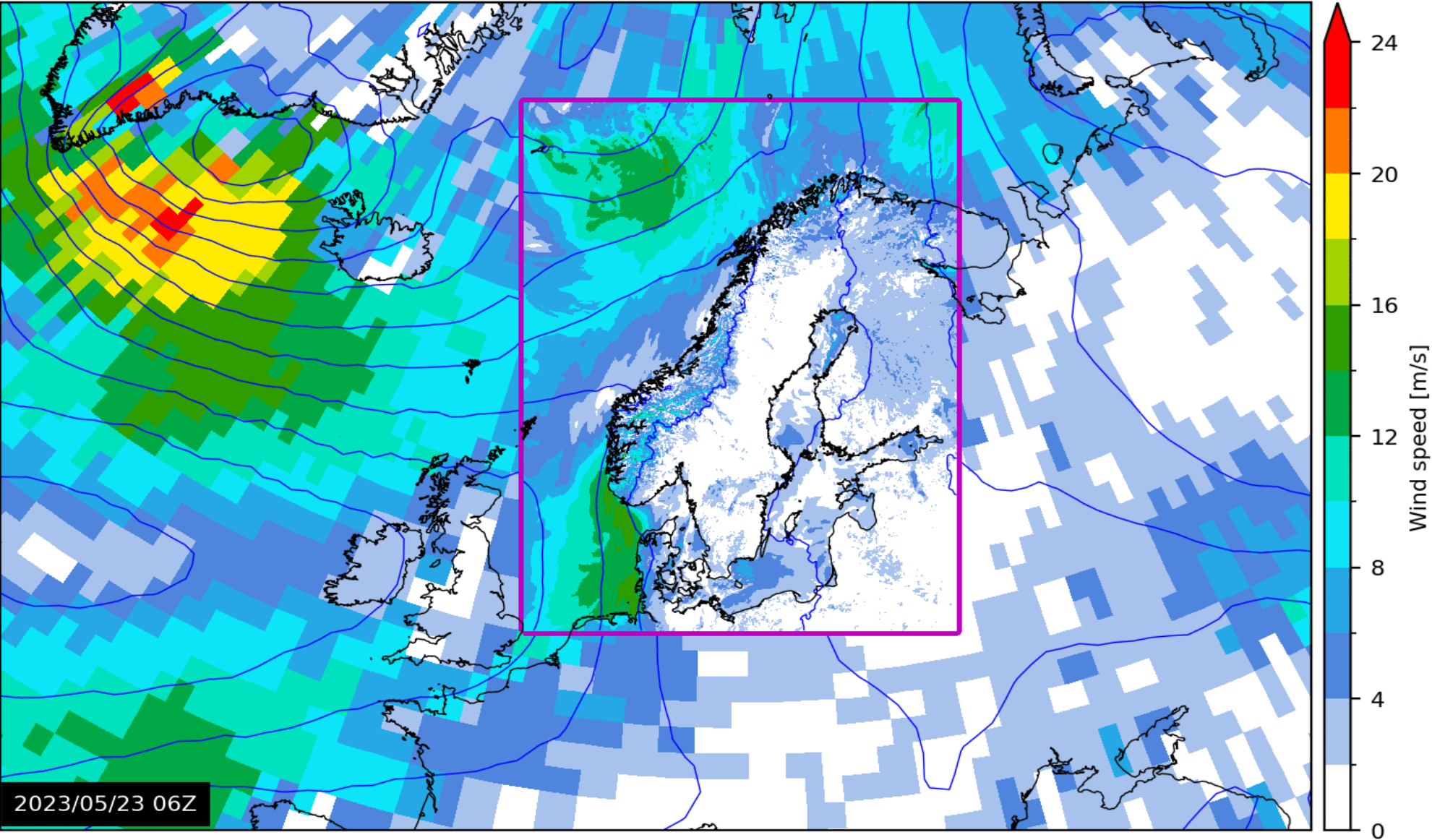


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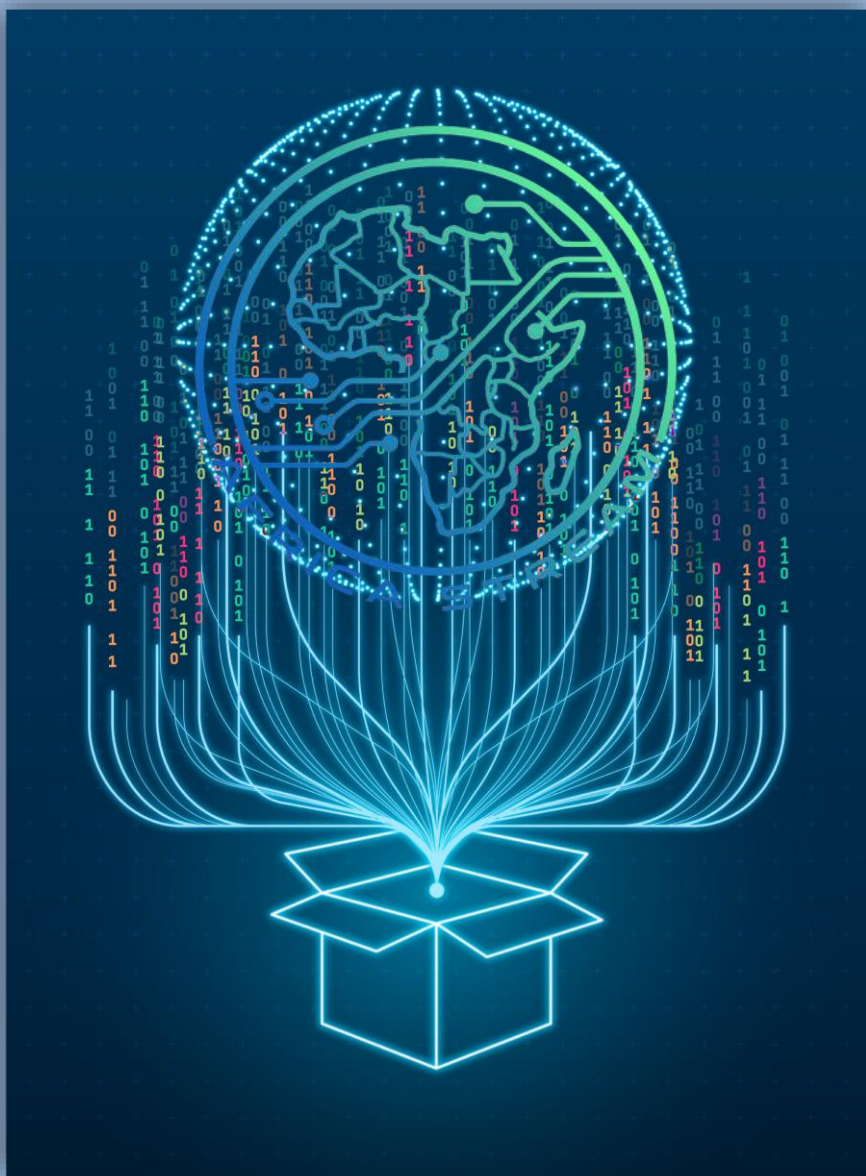




One of the use cases: The Bris Model...



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ECMWF



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Main principles of ECMWF's engagement in ArcX

- Focus on advancing STI for sub-seasonal (2–4 weeks) and seasonal (1–6 months) climate forecasts
 - Advance on the use of Artificial Intelligence (AI) and Machine Learning (ML), bring Forecast-in-a-Box to a seasonal scale
- Partnership
 - Engagement with entrusted entities covering the other thematic areas
 - Foster the involvement of the EU and African private sector
 - Collaborate closely with JRC and connect with WMO's Action Plan on AI and Climate Digital Innovation Hub
 - Build on top of relevant outputs like ClimSA and SEWA as well as European data and existing partnerships
- Ensure ownership and build capacity
 - Enhance local capacities through improved data collection, knowledge creation and skill development as well as innovation challenges
 - Co-development and cooperation



