

# Successes and Challenges in Meeting Data Repository Certification Requirements

Robert R. Downs

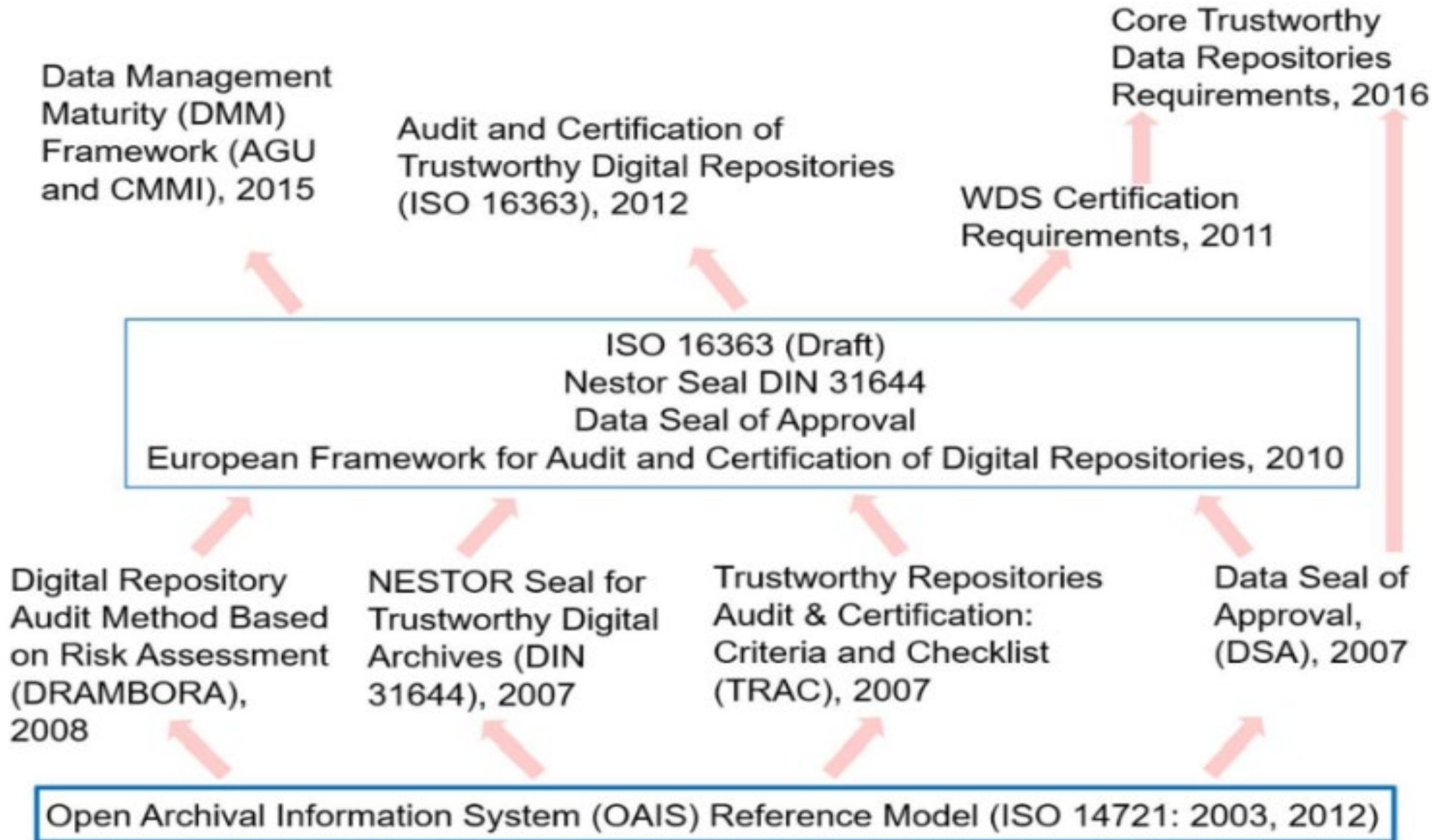
NASA SEDAC, ESCO and Astromat  
Center for International Earth Science Information Network (CIESIN)  
Columbia Climate School, Columbia University

Prepared for Presentation to the Research Data Alliance 21st Plenary (RDA P21)  
International Data Week, Salzburg, Austria, 23-26 October 2023  
Breakout Session 6: TRUST Principles and Repository Certification Landscape  
Thursday, 26 October 2023, 12:00-13:30:00 UTC (14:00-15:30 AT)

Copyright 2023. Columbia University in the City of New York.



# Successful Evolution of Trustworthy Data Repository Assessment Instruments



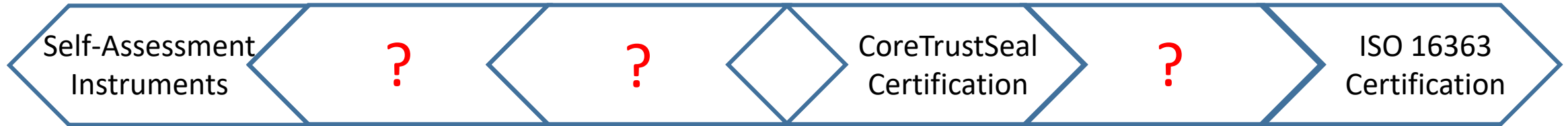
# Examples of Successful Continuing Data Repository Certification Efforts

- CoreTrustSeal Trustworthy Digital Repositories Requirements
  - Community-based requirements for trustworthy data repositories.
  - Current version of CoreTrustSeal Trustworthy Digital Repositories Requirements 2023-2025 freely available at <https://doi.org/10.5281/zenodo.7051012>
- ISO 16363: 2012 Audit and Certification of Trustworthy Digital Repositories
  - Rigorous examination of digital repository capabilities – 109 requirements
  - Current version of Audit and Certification of Trustworthy Digital Repositories Recommended Practice (CCSDS 652.0-M-1) freely available online: <https://public.ccsds.org/Pubs/652x0m1.pdf>
  - Limited ISO 16363 certified data repositories: United States Government Publishing Office (2022)
- Forthcoming revisions
  - ISO 16363 currently under revision by Consultative Committee for Space Data Systems (CCSDS) Data Archive Interoperability (DAI) WG and the International Standards Organization
  - OAIS Reference Model (ISO 14721) also is currently under revision
  - Current version of Open Archival Information System (OAIS) Reference Model (CCSDS 650.0-M-2) freely available online: <https://public.ccsds.org/Pubs/650x0m2.pdf>

# Challenges for Assessing Data Repository Trustworthiness

- Consistency among data repository assessment reviewers
  - Does the interpretation of requirements vary among reviewers?
  - Training and communication?
- Resource demands for less-advantaged data repositories
  - Data repositories in developing countries?
  - Pioneering data repositories?
- Enabling understanding by the designated community
  - Domain versus generalist repositories?
- Mission requirements
  - Does mission statement terminology reflect data repository capabilities?
- Data quality
  - Implications of no data review, data review, and data peer-review for trustworthiness?

# Is there a spectrum of data repository assessment options?



How will data repository assessment options serve an evolving data repository ecosystem?