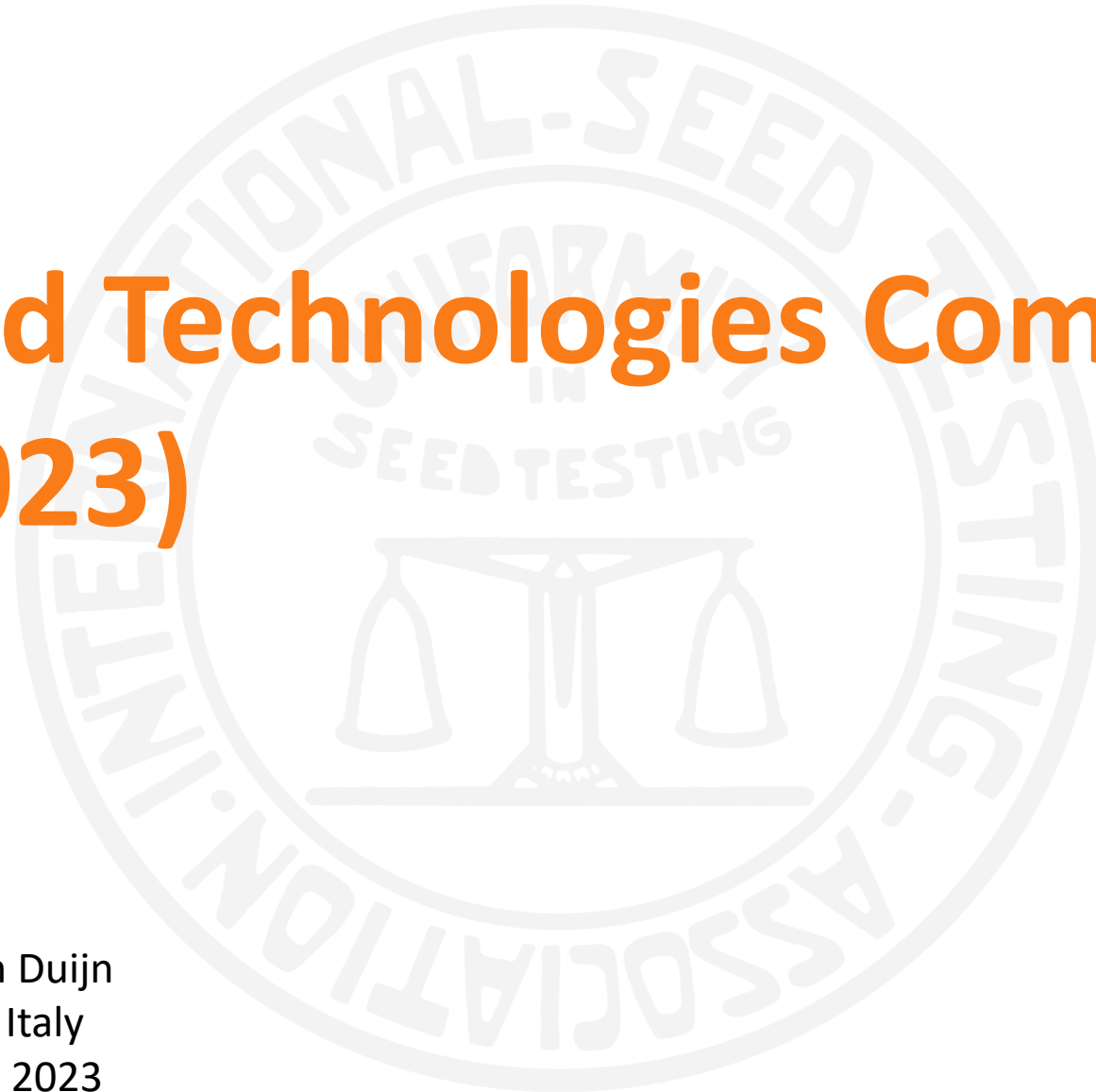


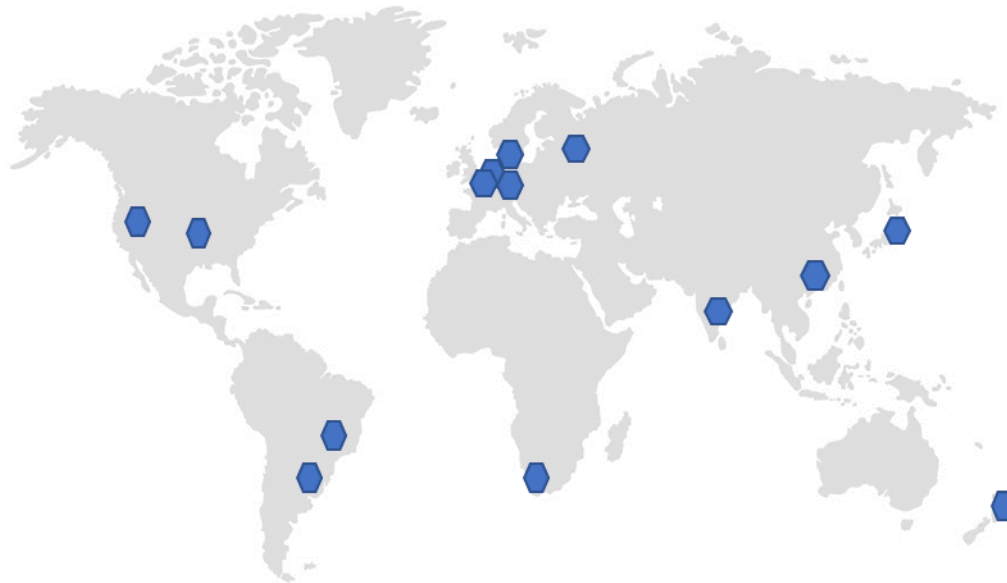
ATC

Advanced Technologies Committee (2022-2023)

Presenter: Bert van Duijn
Location: Verona, Italy
Date: May 30, 2023



16 Members from 13 Countries



- Bert van Duijn (NL), chair
 - Francisco G. Gomes Junior (BR), vice chair
 - Brigitte Hamman (SA)
 - Devaraja Achar A.M. (IN)
 - Birte Boelt (DK)
 - Sebastian Bopper (GER)
 - Kent J. Bradford (USA)
 - Henry Bruggink (NL)
 - Aurélie Charrier (FR)
 - Giovanni Lopez (NL)
 - Mailén Ariela Martinez (AR)
 - Nikolay S. Priyatkin (RU)
 - Tomoko Sakata (JP)
 - Zhujun Zhu (CN)
- NEW:** Sunmeet Bhatia (NZ)
NEW: Ganesh Kumar (USA)
Ecom liason: Craig McGill

Aims

- To form a bridge between the world of research and development, and ISTA's other Technical Committees.
- To collect and interpret data and opinions on 'advanced' technologies.
- To provide information on advanced technologies to the ISTA community.
- To chair or participate in research and tests of advanced technologies in cooperation with other Technical Committees and/or act as reviewers.
- To assist ISTA by formulating views of ongoing or future technological developments from a seed testing perspective.

Current working groups

Finalized:

- Nano-technology
- Chapter on the use of X-ray in seed testing in the ISTA Handbook (with PUR). The new chapter will be published in 2023.

- X-ray based technologies
 - 2D X-ray
 - 3D X-ray
- (Multi spectral) Imaging
- (Mathematical) Modelling in seed testing
- **Molecular Technologies**
- Workshops/ seminars

ATC involvement in 3 ISTA funded special projects

New Technologies for Other Seeds Determination

(Collaboration between ATC and PUR), Finalized 2022

Assessment on available technologies of imaging and image analysis for other seeds determination (OSD), purity analysis and germination.

(Collaboration between PUR, ATC and GER), Finalized 2023

Exploration of methods for detecting insects in seed lots.

(Collaboration between SHC and ATC), Finalized 2023

ATC organised the seminar “Advancements and innovation in seed testing: from science to robust test” at the Annual Meeting in Cairo

The seminar presentations are available from the ISTA website (www.seedtest.org/en/events/ista-congress-2022.html)



(ATC) seminars and meetings on May 31 (Side Meetings)

- Forum on “Assessment on available technologies of imaging and image analysis for other seeds determination (OSD), purity analysis and germination”. Results of ISTA Special Project of PUR, ATC, GER.

11.30 – 12.30 in Mascagni room (in PUR open meeting)

- Seminar-discussion “Mathematical modelling in seed testing”. ATC Working group with STA and MOI members.

13.30 – 15.30 in Mascagni room

- Lecture and discussion on “Insect detection in seeds”. Results of ISTA Special Project of ATC and SHC.

16.30 – 17.30 in Mascagni room

Seminar-discussion “Mathematical modelling in seed testing”.
Organised by Working Group with ATC, STA and MOI members.
13.30 – 15.30 in Mascagni room, May 31

Program

13.30 **Introduction to the initiative and types of modelling to consider**

Bert van Duijn, ATC / Tomoko Sakata, ATC

13.45 **The Ellis-Roberts viability equations to model seed longevity in storage and extension into germination time courses via the PBT models**

Fiona Hay, MOI / Kent Bradford, ATC

14.10 **A.I. Based Modelling in Seed Imaging Applications**

Kyle T. Peterson (Bayer Crop Sciences, Innovation Science & Engineering, USA)

14.45 **Discussion on Assessing Uncertainty in Seed Testing Models & Statistics Committee Activities**

Jean-Louis Laffont, STA / Kirk Remund, STA

15.10 **Wrap up and discussion.**

15.25 **Concluding remarks and brain refreshed departure**

ATC workshop - Imaging in seed quality assurance
November 27-29, 2023. Christchurch, New Zealand (after the APSA conference)

ATC-SHC workshop – Insect detection in seeds
December 6-8, 2023. Angers, France

ATC workshop - Imaging seeds
2024. Bologna, Italy

ATC seminar – Advances in Seed Testing
2024. Hangzhou, China





Thank you!

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