



Project AIR

Validation of regulatory cleared AI software for radiology

Hospital information, v1.0

June, 2021

Radboudumc

Summary

Why

- Multiple tools for similar tasks
- Lack of public evidence on (compared) performance
- Increase transparency in the AI for radiology market

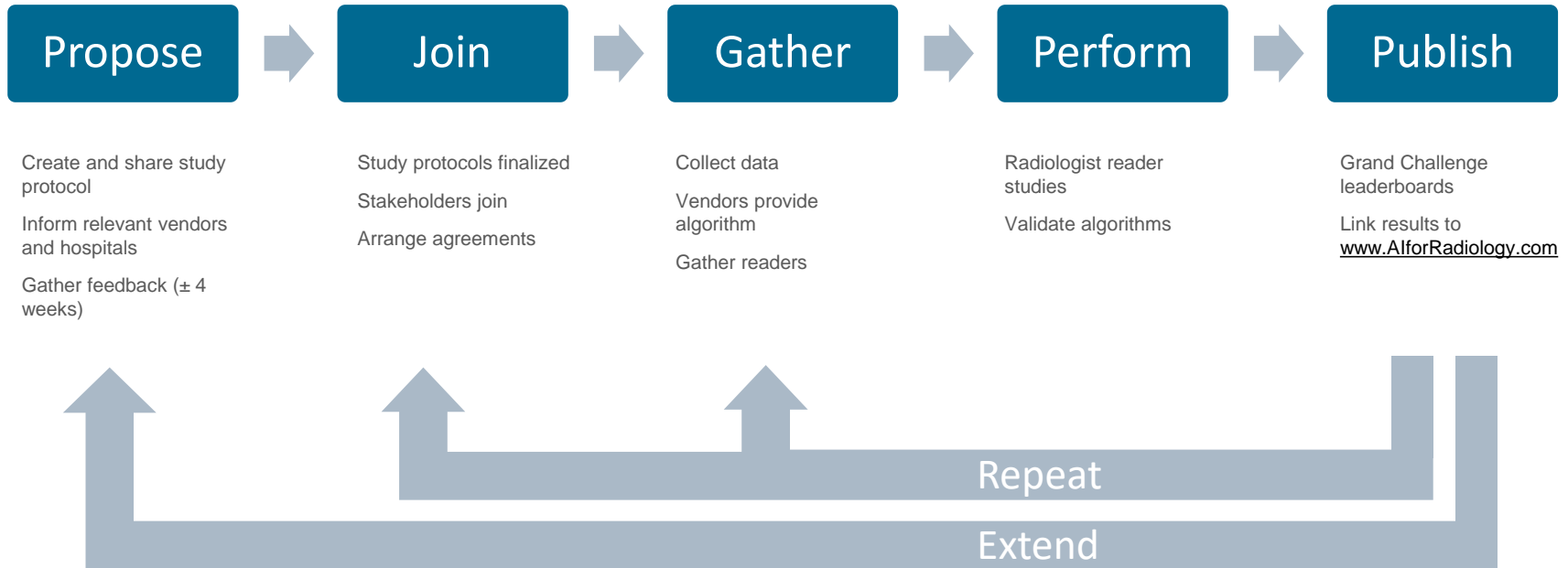
How

- Setting up a physical and digital infrastructure for technical validation studies
- The process is repeatable with:
 - New use cases
 - New vendors
 - Algorithm updates

What

- Performing independent technical validation studies
 - Multi use case
 - Multi center
 - Multi vendor
- Equal hidden test set
- Equal reference standard
- Reader studies to provide context
- Results are publicly available

Study process



Initial use cases

- We start with three use cases which can be expanded to any task for which multiple cleared AI products are offered.
- All vendors offering a product for such task that are listed on www.AIforRadiology.com get an invitation to join.



**Lung nodule detection
on
chest radiographs**



**Bone age prediction
on
hand radiographs**



**Large vessel occlusion detection
on
brain CTA**

Opportunities to participate

Data provider

As a data provider you help create the independent, hidden dataset to validate the algorithms on. In return, you do not only get to see the aggregated, public results, but also the performance of the different algorithms on your data specifically.

Reader

To provide context to the algorithm results, we are looking for at least 10 readers per use case. Reader results will be presented anonymously. You will receive your personal score in relation to the ground truth, which you can compare to other readers and the algorithms.

Data handling

- Data exists out of anonymized imaging and clinical data, which is securely shared via SURF.
- Data is kept hidden and will not be shared with vendors to ensure independent and fair validation.
- Images will be made available through www.Grand-Challenge.org to host the reader studies and are only accessible to participating radiologists.
- A Data Transfer Agreement is signed for collaboration.

Publication

- Performance results of the algorithms on the whole dataset will be publicly shared as a leaderboard on www.Grand-Challenge.org.
- Performance results of the algorithms on the dataset from a specific hospital will be communicated with that hospital.
- Validation may be repeated as new algorithms are introduced or algorithms are updated. All online published results become updated accordingly.
- A single article will be submitted to a peer-reviewed journal about the first set of data, use cases and vendors to demonstrate the framework and process. Participating centers and readers have the option to join the Project AIR Working Group and join as such as a co-author.

Why join as a data provider?



Receive validation results
for multiple commercial AI
products



Join as a co-author by
becoming part the Project AIR
Working Group

Why join as a reader?



Benchmark yourself to
other radiologists and AI
algorithms



Join as a co-author by
becoming part the Project AIR
Working Group

How do I join?

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Core team



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Appendix: Technical process

