



ACTUARIAL ASSOCIATION OF EUROPE

EurACI -European Actuarial Climate Index

AAE Board meeting

For Information

Status as of 15th May 2020

Information about the current status

- Original idea to leverage upon the American ACI turned out not to be optimal:
 - There are serious concerns about the use of gridded data and the intention for ACI v2.0 is to move to individual station data
 - Using gridded data is relying on a black box over which we have no control
 - Gridded data is not sufficiently granular to give meaningful information for specific areas
- Plan B is to construct the EurACI from zero ground using individual station data (Australian Index is also based on station data). The WG has formed the view that this is the best option.

Proposal - delivery

The possible solution might be provided from the actuary Matt Modisett

<https://www.linkedin.com/in/mattmodisettkft/?originalSubdomain=hu>

Who has positively reflected to the AAE WG inquiry to provide the solution,

Proposed work:

1. **Creation of an EurACI index, that can be regularly reported.**
 - Data used: GHCNDEX station data (global, land). This data is freely available.
2. **Clear, transparent methodological documentation**, to include:
 - Treatment of “holes” in the data as stations have historically gone on- and off-line;
 - Recommendations on how insurance entities could modify this index for their own risk exposures. This includes reproducing existing gridded indices. (See 4.a.)
3. **The model can be available to the profession and will be usable on a PC.**

Emphasis is made that there will not be reliance on particular vendors, or any black boxes.

Proposal - technicality

The ECA&D is used by the KNMI, with whom we wish to work on this project for technical input and for credibility of our final product. According to a representative at KNMI with respect to the above data set, “we should not expect any differences” from that used at ECA&D.

- The deliverables would include a reconciliation of above data to results of ECA&D.
- Aggregating (“gridding”) station data into a grid before analysis (e.g. averaging everything in a region) loses information that could be used for subsequent analysis, e.g. for different grids. The distortions occur both spatially and over time.
- This analysis will develop a station-based, or position-based, model. This will address holes directly, while allowing the development of other (e.g. insurance-entity specific) indices.

ECA&D European Climate Assessment and Dataset
KNMI - Royal Netherlands Meteorological Institute

Proposal – Finances and timing

Costs and conditions:

- The cost is €78K (incl. 20% VAT), calculated as 26 weeks work at 50% of the provider's usual billable rate of £1K per day.
- This is a fixed cost. Any time overruns would incur no additional costs for the AAE.
- Payment on delivery, or after a review period of no more than 6 months
 - So, the cash out will be in 6 - 12 months time from the start
- This does not include the publication of the Index which will require some website development and ongoing publication/press release support

Risk and opportunities

Risks:

- Reliance on one person: supervision and testing from working group members
- Funding: Focused sponsorship is envisaged and will keep AAE independent
- Maintenance costs yet to be assessed: are expected to be modest

Opportunities:

- We will own the know how and software
- Momentum – current attention of the public and EU stakeholders
- Deliver on the promise

Next steps

1. More formal and detailed proposal asked from Matt Modisett including CV and references
2. Forming a technical group to define the exact specifications, oversee the work of Matt, perform peer reviews and do the acceptance test
3. Produce a 'sponsor friendly' document describing the EurACI project
4. Explore whether the work can be done in collaboration with a dedicated group of actuaries from Eurapco
5. Formal decision-making in the AAE Board

Eurapco is an alliance of eight European mutual insurers (www.eurapco.com)

Addendum

- Station data: point data belonging to the location of the point of measurement
- Gridded data: interpolated station data in order to get the expected value on any given point in a (meridian) grid
- Example of an issue with gridded data:
 - A heavy (hail) storm is often very local
 - Interpolation using closest station data will not give the information of a more local extreme weather event.

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