



# Aggregative Contingent Estimation (ACE)

Improving Forecasting through the Wisdom of Crowds

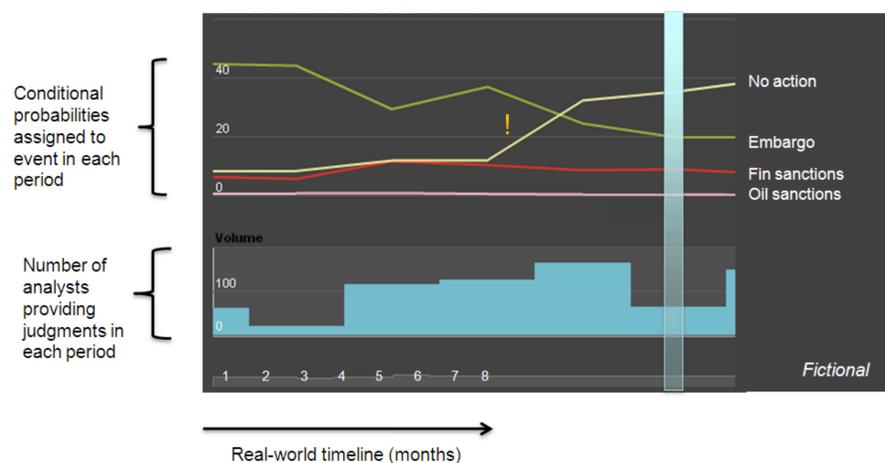
Program Manager: Dr. Steven Rieber; E-mail: steven.riever@iarpa.gov



## Goal

Generate accurate and timely probabilistic forecasts for geopolitical events by aggregating the judgments of many widely-dispersed analysts.

### Country X nuclear test by 1/1/15?

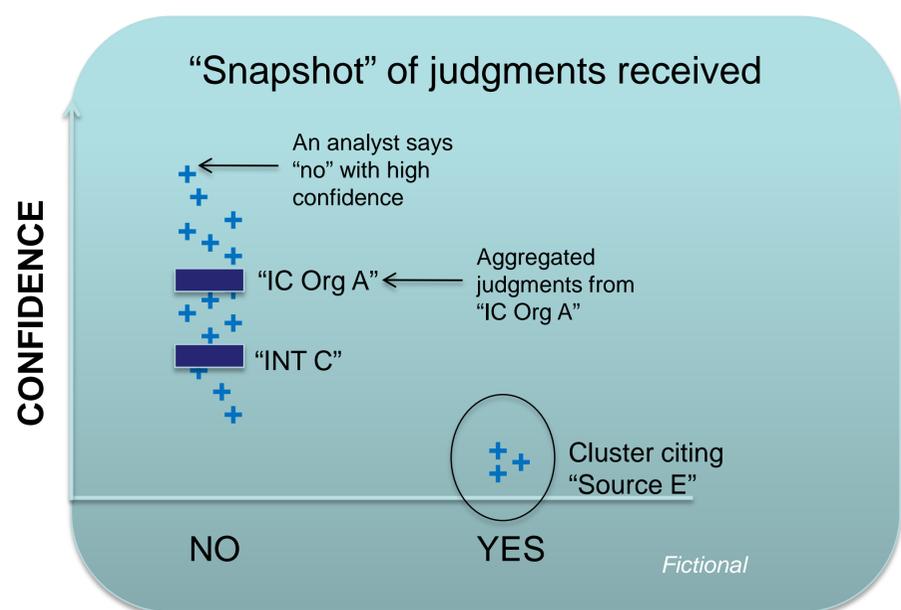


## Approach

Elicit, weight, and combine independent forecasts from over 15,000 research participants, using information about the participants and their patterns of judgment. The top ACE team (Team Good Judgment) has applied its methods to over 400 forecasting problems.

Program schedule: June 2011 – June 2015

### Country X n-test by 1/1/15, given embargo



## Evaluation

Continuously evaluate methods for accuracy on real-world events. To date, over one million judgments have been scored. Results are compared to the best known approaches, including surveys and prediction markets.



ACE has achieved a 50+% reduction in error compared to the current state-of-the-art.

## Sample Forecasting Problems

Will North Korea launch a new multistage missile before May 10, 2014?

Will Russian armed forces enter Kharkiv, Ukraine, by May 10, 2014?

Will there be a significant attack on Israeli territory before May 10, 2014?

Will Robert Mugabe cease to be President of Zimbabwe by September 30, 2011?

Will Greece remain a member of the EU through June 1, 2012?

## Potential Impact

Improve intelligence estimates to support decision-makers, identify the most accurate analysts, measure the effects of analytic training and tradecraft, and provide a snapshot of analytic judgments.

### Notable media attention:

- **Financial Times Magazine** – “How to See Into the Future,” by Tim Harford, 9/5/2014.
- **The Wall Street Journal** – “U.S. Intelligence Community Explores More Rigorous Ways to Forecast Events,” by Jo Craven McGinty, 9/5/2014
- **NPR** – “So You Think You’re Smarter Than a CIA Agent,” by Alix Spiegel
- **The New York Times** – “Forecasting Fox,” by David Brooks, 3/21/2013
- **The Economist** – “Who’s Good at Forecasts?”
- **The New Yorker** – “When Less Confidence Leads to Better Results”
- **The Washington Post** – “Good Judgment in Forecasting International Affairs (and an Invitation for Season 3),” by Michael Horowitz
- **The Washington Post** – “More Chatter than Needed,” By David Ignatius

### Notable journal articles:

- **Proceedings of the National Academy of Science of the USA** – “Judging Political Judgment,” by Philip Tetlock and Barbara Mellers, 8/12/2014
- **PLOS ONE** – “Expert Status and Performance,” By Mark Burgman et al., 7/29/2011

[goodjudgmentproject.com](http://goodjudgmentproject.com)

## Research Teams

