a focus on **gaming for research**
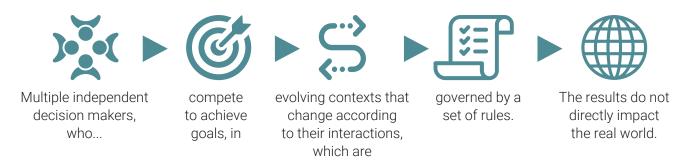
RAND EUROPE

The history of gaming at RAND

RAND has been designing and employing wargaming techniques for over seventy years. In the 1950s, RAND analysts developed much of what is now known as game theory. Pioneers such as Nash, Schelling and Shapley all went on to receive Nobel Prizes for their work.

Alongside developing the theory, RAND also promoted the practical application of gaming methods to real-world problems in defence and other areas of policy. One famous example is the idea for the US–Soviet "hotline": the famous red telephone, allowing the US President and his Soviet counterpart to communicate in times of crisis, arose from a RAND game in 1961. In the 1990s, novel approaches such as the "Day After..." method further added to RAND's toolkit and helped reinvigorate interest in gaming as an instrument of research and policy after the Cold War.

Gaming as a policy tool

A "game" can be thought of as any interactive process with five basic characteristics:

Multiple independent decision makers, who... ▶ compete to achieve goals, in ▶ evolving contexts that change according to their interactions, which are ▶ governed by a set of rules. ▶ The results do not directly impact the real world.

"Serious games" have been used by RAND and others to explore a wide variety of policy issues, from urban planning, climate change and drug and health policy to disaster response and national security. Games can be orientated at the policy, strategic, operational or tactical level depending on the subject. They may be competitive or collaborative, and involve individuals, small groups or larger exercises with hundreds of players. Some revolve around traditional game-boards or table-top discussions; others are computer-assisted and make use of simulated data feeds, TV broadcasts and social media. Each RAND game is different, calibrated to its topic, audience and purpose.

Gaming at RAND Europe today

RAND Europe regularly incorporates elements of gaming theory and practice into its wider research projects. It also designs and delivers bespoke games for governments, multinational institutions and other clients. Gaming can serve a variety of purposes:

- As an analytical tool for framing and exploring a particular policy problem or scenario.

- As a safe environment for stress-testing different possible strategies or courses of action.

- As a technique for exploring the logic, creativity and assumptions underpinning policy or decision making.

- As an interactive means for education and training, conveying learning in an engaging, visceral manner.

- As a vehicle for bringing together different communities of interest to share perspectives on a given issue.

In the US, the Center for Gaming at the Pardee RAND Graduate School continues to develop novel gaming methodologies, as well as to educate the next generation of gaming practitioners.

Applications of RAND Europe's gaming expertise

In addition to advising governments and organisations on how they can themselves learn and apply gaming techniques to difficult questions, RAND Europe conducts an array of different types of gaming for our clients. Examples of recent projects include:

Strategic exercises for senior decision makers

Purpose: Analysis to inform strategy or policy development, or education and training.

Gaming the new NATO Military Strategy: Scenario-based exercise for NATO Allied Command Transformation (ACT) to help senior military officials from all twenty-nine allied nations "stress test" the latest NATO Military Strategy.

Strategic exercises at the Royal College of Defence Studies (RCDS): Multi-year support to the Senior Course at RCDS, organising two week-long exercises each year for over a hundred senior public sector officials from fifty countries.

Cyber exercises for senior European officials: Series of exercises for the European Defence Agency (EDA) and German Defence Academy to expose senior defence decision makers to the complex challenges of a cyber-related crisis.

Regionally focused games to understand emerging threats and opportunities

Purpose: Use of game mechanics to examine the complex dynamics of cooperation or competition among actors.

Gaming threats to international cooperation and security in the Arctic: Scenario-based exercise in Oslo, Norway, involving business leaders, academics, and diplomatic and military officials from across the Arctic region.

Gaming security, migration and economic challenges in the Mediterranean: Multifaceted exercise at the NATO Defence College in Rome, exploring the interplay between different macro-level trends in the wider Mediterranean.

Table-top exercises (TTX) to explore future scenarios

Purpose: Use of game mechanics to examine future trends, requirements and policy options in a virtual "safe space".

Gaming support to the EU Capability Development Plan 2035+: Delivery of multi-day TTX for capability planners from over a dozen European nations, along with the EDA and NATO, exploring future military requirements out to 2035+.

Examining the policy, operational and ethical implications of future technology: Organisation of scenario-based workshops to examine the impact of emerging technologies such as autonomy, robotics, cyber and artificial intelligence.

Novel applications of gaming techniques to non-defence sectors

Purpose: Interdisciplinary application of gaming and modelling to all sectors of policy and the economy.

Gaming the challenges of anti-microbial resistance (AMR): Design and delivery of an innovative game examining policy options for addressing the medical, political and economic challenges arising from AMR, involving participation from the UK Chief Medical Officer and senior officials from the National Health Service and Public Health England.

Exploring the impact of ICT on crime: Design of a TTX for the European Commission and Estonian government to examine the implications of new information and communication technologies for cybercrime in digital society.

RAND Europe contacts

Ruth Harris

Ruth Harris directs the Defence, Security and Infrastructure research group at RAND Europe. She previously served for over twenty years in the Royal Air Force and held senior posts in both NATO and the Directing Staff at the UK Defence Academy. Ruth has designed and delivered wargames for the UK Ministry of Defence and NATO, and is a recognised subject matter expert in issues of human security, defence policy and international security.

James Black

James Black is a Senior Analyst and heavily involved in RAND Europe's gaming portfolio. He has advised the UK Ministry of Defence on gaming and modelling techniques, and has designed and delivered strategic-level exercises for a range of UK and European defence organisations. His wider research focuses on defence strategy, policy and decision making in the face of uncertainty, as well as on assessing future trends in geopolitics, society and technology.

Sarah Grand-Clément

Sarah Grand-Clément is an Analyst with experience managing and supporting a range of gaming projects at RAND Europe, including strategic-level exercises for training purposes, as well as analytical games focused on specific regions or themes. Her wider research focuses on horizon scanning and emerging technologies, counter-terrorism, radicalisation and security trends in the Middle East and North Africa.

Read more and meet the team at
www.randeurope.org/gamingforresearch

RAND EUROPE

RAND Europe is a not-for-profit research organisation that helps to improve policy and decision making through research and analysis