



International Network
for Governmental
Science Advice

INGSA-GESDA Simulation Game

NEUROTECHNOLOGY WORLD BUILD

Governance of Revolutionary Technology

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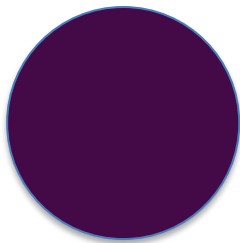
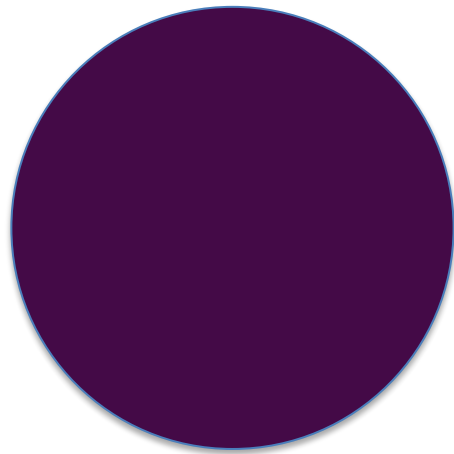
2. Workshop Facilitation Guide



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2. Workshop Facilitation Guide



About the Geneva Science and Diplomacy Anticipator Foundation (GESDA): An independent non-profit foundation under Swiss law and a private-public partnership with the Swiss and Geneva authorities, GESDA was created in 2019 to strengthen the impact and innovation capacity of the international community through science and diplomacy anticipation. For more information, please visit the Foundation's website: www.gesda.global

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INGSA is a New Zealand-based International Organisation hosted at the University of Auckland by *Koi Tū: Centre for Informed Futures*, and operating under the auspices of the *International Science Council*.

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Governance of Revolutionary Technology



Background: Time-lapse case

This is a time-lapse case, in three parts. At the opening of the workshop, participants will be presented with the world in 2043 when neurotechnology and brain implants are in wide-spread use and issues related to the access to the technology are coming to the fore. Following this look into the future, participants are given the opportunity to sketch out together what an ideal alternative future might look like. The 2043 scenario and their proposed alternative future will frame the game's discussion.

We then 'rewind' to the present day and ask teams of participants to undertake an exercise to explore what decisions could be made to help avoid the negative 2043 situation, and lead instead toward the more positive scenario.

The aim of the exercise is for participants to reflect on ideal futures, and then respond to the fictional scenario from the perspective of their assigned characters, and in doing so, generate dynamic circumstances to which they have to respond.


Participants will work in **teams of approximately eight** with the aim of **agreeing to a set of policy or governance interventions** that they believe would lead to the ideal future and mitigate the possibility of the negative future. This is considered their 'world-build'

All teams will then share their 'world-builds' with a new team, and each team will be responsible for evaluating whether the choices made will result in a 'world' that is moving towards a positive outcome to the challenges outlined in the scenario.

Preparation for workshop

In advance of the workshop, it is recommended to circulate the case study's BACKGROUND section to participants. This could be the day before or on the day, prior to the case, so that participants are able to have a couple of read-throughs of the background information.

Setting up for workshop

- We strongly suggest creating "Character Cards" that include the Character Roles in large format text. These can be folded to stand on a table in front of participants so that everyone can see their role. We recommend teams of 8 but there are more characters that can be randomly assigned to ensure teams have a range of different configurations.
 - Provide pens and highlighter pens to each table.
 - Divide the group into tables of 8
 - Have group members blindly pick a role from the stack of "Character Cards"
 - Fold Character Cards so that other players can see what your role is.
- 

Game structure

Step 1. Seeing the Future (20 minutes)

At the opening of the workshop, participants will be presented with **the world in 2043** scenario, that they had previously received in the Game Background Document.

Following the reading of the 2043 scenario, the lead facilitator is to lead a group-wide discussion to help envision what a better or more positive scenario might look like. Participants are asked to reflect on the characteristics of a future that has better outcomes given the same types of constraints.

Step 2. Decisions today (60 minutes) – World Building

The group then breaks into teams of eight members to rewind to the present. The fictitious context for which these teams are convening in the present day is a meeting of the International Technology Governance Observatory (ITGO) who have been asked to prepare recommendations to a UN Security Council meeting on Neurotechnology. Each person then randomly picks a character from the Character Cards and reads their character profile.

Teams then undertake to explore – from the angle of their character - what decisions might be made to mitigate 2043 scenario they have just seen, and to steer towards the preferred outcomes they have discussed instead. To do this they will complete the TEMPLATE (see: 3. Workshop Resources) with their decisions for each sector, as they see relevant.

The aim of the exercise is for participants to respond to the fictional future scenario from the perspective of their assigned characters in the present. They will work through a series of prompt questions and make decisions from their character's perspective. In doing so, they will generate various dynamic circumstances that will shape their world in the next 5-10 years.

Step 3. World-Build Swap and Assessment (30 min)

(Facilitators are encouraged to keep this step a surprise). Facilitators announce that each team is to hand its template to the team to the left of them. Facilitators declare that it is 2033 and the interventions that teams now see before them have been implemented. Teams are then given 10 minutes to discuss what they are presented with and to consider whether the set of decisions the other team made would:

- a. Result in unforeseen circumstances that are positive/negative
- b. Result in the world moving towards a more positive or negative future, as set out in the scenario and their opening ideation process
- c. What they might suggest at this stage to get the direction of travel back on track.

Everyone should then return to plenary, and the teams will give reasons for their assessments, and together the whole group they will unpack the:

- Influence of different actors in decisions (national, transnational, multilateral)
- Influence of structural conditions and how path-dependencies were addressed/redirected
- How decisions were made with incomplete information and uncertainties

Step 4. Conclusion of play and debrief (30 minutes)

The group will then collectively debrief in a discussion led by the facilitators.

Some prompt questions for debrief include:

- What are the issues now, and how might these issues evolve to result in the crisis?
- What decisions/structures led to the foreseen future?
- What are the risks of acting? What are the risks of doing nothing?
- What are the opposing forces you can see and how might these be balanced?
- What are the limitations in your knowledge and the risks involved?
- What are the gaps (in governance and/or in evidence) that could assist in supporting a decision? Are your decisions likely to have social licence? Could they backfire?
- What structures could have been put in place before the crisis, to make information flows, trust, decision-making and collaboration simpler?

The Workshop Resources includes other prompts for facilitators about the tensions and dynamics between characters that might occur. These can be part of the debrief discussion if needed.

The role of mentors

The primary aim of the game is for participants to consider the governance and policy decisions (and the difficulty of implementing these) required to avert a crisis situation.

It is for them to think about what types of information, action, or collaborations they might require, the difficulties of obtaining this, and what challenges their policy decision might result in, and how they might get around these to negotiate an equitable and sustainable future.

It is therefore not the decision that matters but the understanding of the dependence, limitations and requirements of informed governance of new technology.

Where circumstances allow it, 'mentors' should be assigned to each team's table. Mentors should help ensure that teams understand the task and don't get distracted by unnecessary details. Mentors should be ready to help refocus teams on the main questions outlined above, and to make sure that teams are credibly responding to the circumstances of the 'world' with which they are presented.

Mentors should also feel empowered to respond to teams' decisions with questions that help to deepen the discussion and debate.

Aide-Memoire for Mentors: Country and Character tensions

BRIA

- Bria has the reputation of being uncompromising in diplomatic negotiations, particularly in order to protect its own economic and political interests (tech supremacy). This has been viewed unfavourably by neighbouring states.

Head Of Neuroscience Department, at Bria National University

- Interest in Medormar Corp: Medormar Corp has been responsible for lobbying the govt to invest heavily in neurotech R&D, which is the HOD's highest priority. Medormar Corp also has first-right-of-refusal with Bria National University to commercialise any IP produced by the Department of Neuroscience in neurotech, which would potentially allow them to maintain exclusive IP rights over any technology that is developed.
- Conflict with Solte National University and WK Tech, and interest in Leading Neurotech Researcher: Both WK Tech and Bria National University are aiming to lure Solte's leading neurotech researcher away from Solte Technical University thanks to their prominence in the neurotech field. BNU is the best-funded and resourced of the three organisations.

CEO Medormar Corp (Bria):

- Conflict with the nation of Solte: Medormar Corp has been investing in advanced engineering and manufacturing capacity in Bria, which has led to an influx of skilled workers from neighbouring countries, including Solte. Solte is concerned about the impacts of 'brain drain' on their economy, but Medormar is not bothered.
- Interest in Bria National University: Medormar Corp has first-right-of-refusal with Bria National University to commercialise any IP produced by the Department of Neuroscience in neurotechnology, which would potentially allow them to maintain exclusive IP rights over any technology that is developed.

Minister for Science and Technology (Bria)

- Conflict with government of Bria: Interest in pushing Bria's neurotech for global good conflicts with the Bria government's interests in protecting its own innovation and economic interests.
- Conflict with CEO of Medormar Corp: Minister would like to see that Bria's neurotech capabilities can be used for global public good - and are as accessible as possible. This creates a possible conflict with Medormar Corp's interest in commercialising neurotech for the international market.
- Interest in Bria National University: oversaw a major investment from the government into science R&D, which has been popular.

SOLTE

- Conflict with Medormar Corp: due to perceived impacts on local economy from ongoing brain drain of skilled tech workers.

Minister for Foreign Affairs (Solte)

- Conflicts with Bria and Medormar Corp: See above.

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- Interest in Bria and Wakke: Despite tensions, Solte wishes to pursue science diplomacy/collaborations with other governments when possible.
- Interest in Solte Technical University: Solte wishes for STU to retain their leading neurotech researcher due to the prominence they've granted Solte in the field.

Vice Chancellor Solte Technical University

- Conflict with Bria National University and WK Tech, and interest in Leading Neurotech Researcher: Both BNU and WK Tech are aiming to lure Solte's leading neurotech researcher away from STU. BNU can offer more money and greater facilities and WK Tech is appealing to the researcher's fondness for their birth country.
- Interest in Medormar Corp: The Vice Chancellor believes that signing a deal with Medormar Corp could give STU additional funding and prominence - perhaps enough to allow them to match BNU's offer to the leading researcher.

Leading Neurotech Researcher (Currently at STU, but born in Wakke)

- Interest in Bria National University and WK Tech: Both BNU and WK Tech are making appeals to the Leading Neurotech Researcher to move to their organisations. BNU can offer more money and better facilities and WK Tech is appealing to the researcher's fondness for their birth country.
- Conflict with Medormar Corp: The researcher believes that too great a focus on profitability will make neurotechnology less accessible and deny its benefits to most people.

WAKKE

- Interest/Conflict with the nation of Bria: Bria provides significant foreign aid to Wakke, although Wakke is conscious that it does not want to be overly reliant on other states. It has been investing in developing its own capacity and workforce over the years.
- Conflict with Medormar Corp and Solte: due to perceived impacts on local economy from ongoing brain drain of skilled tech workers

Wakke Ambassador to Bria:

- Interest in Bria: Wakke is highly dependent on foreign aid from Bria, so the Ambassador has an interest in remaining on diplomatic terms with Bria.
- Interest in Solte and Medormar Corp: the Ambassador is interested in securing trade deals, aid, and investment in Wakke to lessen their dependence on Bria.

CTO WK Tech (Wakke tech startup):

- Conflict with Bria National University and Solte Technical University, and interest in Leading Neurotech Researcher: Both BNU and WK Tech are aiming to lure Solte's leading neurotech researcher away from STU. WK Tech is appealing to the researcher's fondness for their birth country.
- Interest in Wakke: As Wakke's most successful tech startup, WK Tech has received significant government support and anticipates more should Wakke's economy and diplomatic position improve.

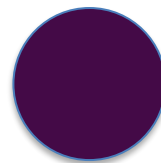
OTHERS

UNESCO Policy Lead for Neurotechnology

- Interest in Wakke, Bria, Solte: The UNESCO Policy Lead is focused on encouraging scientific cooperation and policy alignment on neurotech among countries wherever possible.

Amnesty International Tech Policy Director

- Conflict with Solte Technical University, Bria National University, Medormar Corp: The Amnesty International Tech Policy Director believes that neurotechnology has the potential to enable massive human rights abuses, and is being developed with a reckless disregard for the consequences. Nevertheless, they acknowledge its medical potential. They seek to slow the pace of research and put strong safeguards in place.



ABOUT INGSA

INGSA provides a forum for policy makers, practitioners, academics, and academics to share experience, build capacity and develop theoretical and practical approaches to the use of scientific evidence in informing policy at all levels of government.

Anyone with an interest in sharing professional experience, building capacity and developing theoretical and practical approaches to government science advice is welcome to join INGSA.

By signing up to the INGSA Network you will receive updates about our news and events and learn of opportunities to get involved in collaborative projects.

Go to <http://www.ingsa.org> for more information.

This simulation was developed under the auspices of the Geneva Coalition on Anticipatory Science and Diplomacy, initiated in 2021 by the Geneva Science and Diplomacy Anticipator (GESDA) encompassing 14 Swiss and global institutions to empower the current and next generation of leaders with a multilingual mindset in science and diplomacy.

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