



DEAD RECKONING

The Fight for European Space Security and Strategic Autonomy

Game Guide

Laurence Pevsner



RISKGAMING

DEAD RECKONING

The Fight for European Space Security and Strategic Autonomy

A Riskgaming scenario from Lux Capital

Designer	Laurence Pevsner
Editor in Chief	Danny Crichton
Editor	Katie Salam
Researcher	Yuma Kim
Front Cover Illustration	Carlos Martinez

Contents

The Scenario

1	Dead Reckoning at a glance	5
2	The story	6
3	The real world behind the game	7
4	The trilemma and the trap	9

How It Plays

5	The players	12
6	The cards	14
7	Trading and the SpaceY station	15
8	Scoring	16

Running It

9	What you need	19
10	Before game day	20
11	Run of show	22
12	Final scoring and the reveal	25
13	The debrief	26
14	Tips and troubleshooting	27

From the Tables

15	Four rooms, one trap	29
----	----------------------	----

Reference

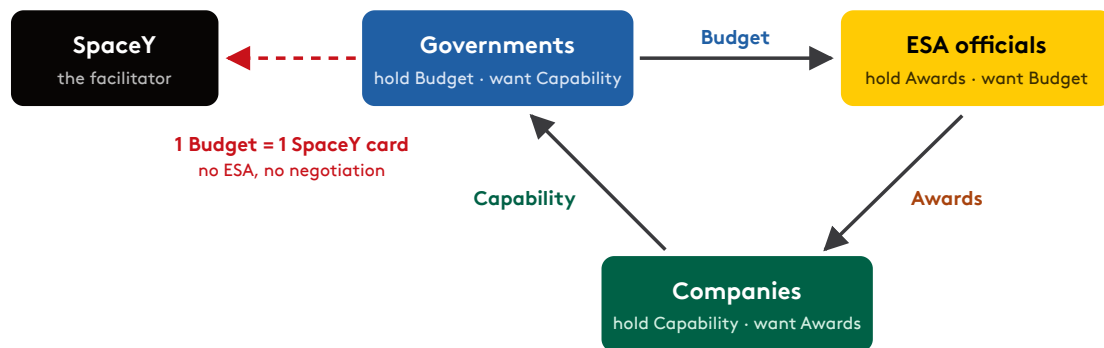
A	The 50 characters	31
B	Scoring fine print	44
C	Cards and packets	46
D	The scoring app at a glance	50

The Scenario

1 Dead Reckoning at a glance

A live trading game for 30 to 50 players about Europe's space dilemma: build your own capability, or rent America's.

Players are national governments, officials of the European Space Agency (ESA), and executives at European aerospace companies. Each of them holds a currency that someone else needs. Governments hold **Budget**, ESA holds **Awards**, and companies hold **Capability**. Every player makes their own deals and scores on their own. Together, without quite realizing it, they decide what Europe ends up depending on.



The loop	Governments pay Budget to ESA. ESA grants Awards to companies. Companies deliver Capability to governments.
The shortcut	At any time, anyone can hand the facilitator one Budget card for one SpaceY card: Capability 5, Jobs 0, made in the USA. It skips ESA, the negotiation, and every European job.
The catch	Every SpaceY purchase moves a share price on the big screen. Europe's own capability stays invisible until the end. Players can watch the American company win in real time, but they can't see whether Europe is keeping pace. They are navigating by dead reckoning.
Players	Designed for 50: 20 governments, 10 ESA officials, 20 company executives. Each type has an overarching goal, and every player has their own secret goal layered on top as a multiplier.
Time	About 90 minutes: a 20-minute briefing, about 35 minutes of trading in two rounds, 12 minutes of counting, then the reveal and a short debrief. With two hours, give the extra time to trading and the debrief.
Space	An open room where people can stand and mingle, a screen everyone can see, and a spot near it for the SpaceY station.
Facilitators	Two to four: a lead who runs the room and a SpaceY banker, who can also enter the final counts, plus one or two helpers if you have them.
Big ideas	Collective action fails without coordination; jobs are political while capability is technical; startups need champions; Europe decides in the fog.
Materials	50 name badges, four kinds of cards packed into starting packets and booster packs, a projector or TV, and two or more laptops or tablets with internet for the scoring app.

2 The story

Read this aloud at the “Story · 2027” slide. It takes about two minutes.

READ ALOUD

Three weeks ago, a Galileo navigation satellite in Medium Earth Orbit collided with debris. European authorities initially blamed space junk from a 2026 Russian anti-satellite test. Then intelligence surfaced suggesting the collision wasn't accidental: Russian cyber operators had compromised the ground segment controlling the satellites, sending one directly into the debris field.

The Americans knew. The U.S. Space Surveillance Network tracked the anomaly in real time but issued no warning. Was it incompetence? Bureaucratic delay? Or something more deliberate: a reminder of who really controls the information architecture of space?

Europe is exposed. Galileo, the crown jewel of European space independence, is degraded. GPS remains operational, but it's American. Starwink blankets the continent with connectivity, but it answers to a Texan billionaire. European launch capability exists, but Ariadne 6 costs three times what Eagle Prime charges.

In Brussels, an emergency session of the European Space Council has been convened. National delegations, ESA officials, and aerospace executives have 48 hours to chart a path forward. The questions are stark:

- Do we double down on European sovereignty: expensive, slow, but ours?
- Do we accept American dependency: cheap, capable, but someone else's?
- Or do we try to split the difference, and end up in the messy middle?

The money is real, the jobs are political, and the capability gap is growing. In Washington, Beijing, and Moscow, everyone is watching to see what Europe decides.

You don't have all the information you need. But you have to move forward anyway.

Welcome to Dead Reckoning.

SpaceY, Starwink, Eagle Prime and Ariadne are the game's stand-ins for the American launch giant, its satellite network, its workhorse rocket and Europe's flagship launcher. The real names appear only in the background talk (chapter 3).

3 The real world behind the game

Below is the background talk that follows the story, slide by slide. It introduces players to the real-world concepts that feed into the game.

Note. All cited facts and statistics are as of October 2026. Launch counts, Starlink's customer numbers, SpaceX's share price and Europe's launch startups all move fast. Check the latest numbers on the morning you present, and update the slide if they've changed.

Europe was first

In 1979, Ariane 1 became the world's first rocket built specifically for commercial satellite launches. By the mid-1980s, Arianespace held over half the global launch market. Europe solved independent access to space before anyone else even framed it as a business.

Then Europe made a choice

In 2013, European officials decided not to make their new rocket, Ariane 6, reusable. Two years later, SpaceX landed a Falcon 9 booster upright. France's former economy minister Bruno Le Maire would later admit: "There was a fork in the road, and we didn't take the right path."

The consequences compounded

In 2025, SpaceX reached orbit 165 times. Europe did it seven times: four Ariane 6 and three Vega C launches. One company now does more than half of all orbital launches on Earth. Ariane 6 is still entirely expendable, and Europe can't compete on price.

Starlink changed the game

SpaceX isn't really a rocket company anymore. It's a telecom company that owns its own delivery trucks. Starlink has more than 12 million customers, and it gets them to orbit on its own rockets.

Then Starlink changed the game again

When Musk ordered Starlink cut off in parts of Ukraine, Europe realized that leaving its communications to one mercurial man in the U.S. might be a risk.

Then SpaceX went public

In June 2026, SpaceX listed on Nasdaq at about \$1.75 trillion. It was the largest IPO in history, and it made SpaceX worth more than Lockheed, Boeing, Northrop and Airbus combined. Now it can raise billions whenever it wants. Europe's primes can't compete for capital on those terms.

Then a startup got there

On September 5, 2026, Isar Aerospace, a German startup, put satellites in orbit from Andøya, Norway. It was their second try: the first, in March 2025, blew up 30 seconds after launch. It was the first time a European commercial company reached orbit, and the first successful orbital launch from Western Europe. It's a small rocket, and it isn't reusable. But it proves Europe can do this a different way. The question is whether Europe backs it or smothers it.

Europe is trapped in a Catch-22

Europe doesn't have reusable rockets because it doesn't have enough satellites to launch. It can't afford a big constellation because it doesn't have affordable rockets. And its rockets won't be affordable until they're reusable and flying constantly.

Shot through all of it is the **geo-return** principle: every euro a country puts into ESA has to come back to that country's industry. As one executive put it: "I cannot choose my supplier. Even if I have suppliers who are not performing, I cannot change them."

This is the trilemma

Europe wants three things: **strategic autonomy** (its own access to space), **cutting-edge capability** (good enough to compete with SpaceX), and **jobs** spread across member states. It can't have all three. Every European space decision is a choice about which one to sacrifice. Right now, Europe loudly demands sovereignty while refusing to disturb its industrial status quo. The result is middling capability.

Sources

- SpaceX's 2025 launches: Space.com, "SpaceX shatters its rocket launch record yet again" (165 orbital flights). Europe's 2025 launches: European Spaceflight's list of European rocket launches in 2025 (Isar's failed March attempt not counted).
- Starlink at 12 million customers: SpaceX's announcement of June 4, 2026, as reported by Crypto Briefing (a secondary source).
- The SpaceX IPO (June 12, 2026, Nasdaq: SPCX): CNBC's listing-day coverage; Wikipedia, "Initial public offering of SpaceX".
- Isar Aerospace's second Spectrum flight: SpaceNews and Payload, September 2026.

4 The trilemma and the trap

Dead Reckoning simulates the trilemma facing European space policy: **sovereignty, jobs and capability**. Europe wants all three, but picking even just one tends to come at the expense of the others.

Sovereignty means European-controlled infrastructure that can't be switched off by Washington or compromised by Moscow: launch access, navigation, communications and domain awareness that answer to national capitals, not Hawthorne or Seattle.

Jobs means contracts flowing to European companies, creating employment in France, Germany, Italy and beyond. Space is industrial policy. Every billion euros spent on Ariadne is a billion euros of engineers in Les Mureaux, not Boca Chica.

Capability means systems that actually work: reliable, modern, competitive. Galileo is a real technical achievement. But the American constellation has thousands of satellites in orbit, and SpaceY launches weekly. The gap is real and growing.

The cruel arithmetic. American systems offer more capability for less money, with zero European jobs and total dependency. European systems offer sovereignty and jobs, at higher cost and often lower performance. Trying to do both mostly produces the worst outcome: not enough volume to sustain European industry, and not enough commitment to gain leverage with the Americans.

The three outcomes

By the end, the players' individual deals add up to Europe's space posture. The reveal measures it three ways.

1. The Dependency Meter

The share of Europe's space capability that comes from SpaceY: all the SpaceY capability held at the end, divided by all the capability held, European and American. It lands in one of three zones.

Autonomy		The Trap		Strategic Partner	
0%		25%		75%	100%
DEPENDENCY	ZONE	WHAT IT MEANS			
Below 25%	Autonomy	Expensive, but sovereign. Europe controls its destiny.			
25% to 75%	The Trap	Not enough sovereignty, not enough leverage. The worst outcome.			
Above 75%	Strategic Partner	Europe is SpaceY's biggest customer: dependent, but with leverage.			

2. The jobs map

Which countries captured Europe's space jobs. Did France dominate? Did Germany's startups survive? Did the smaller countries get squeezed out?

3. Winners and losers

A winner in each of the three categories, an overall champion, and a set of superlatives, from “SpaceY’s Best Customer” to “European Patriot”.

Why it’s called Dead Reckoning

In navigation, dead reckoning means estimating your position without outside references, using only your speed, heading and time. You’re flying blind and hoping your math is right. That’s Europe in this game.

What players can see: the SpaceY market. Every purchase shows up on the big screen. The share price climbs, the trades scroll past, and everyone watches the American company win in real time.

What they can’t see: European capability. It’s spread across dozens of hands and hidden in private deals. Nobody knows the total until the bureaucracy tallies it at the end. This is true in real life: European capability is distributed, American capability is concentrated.

Individually, buying SpaceY is rational: it’s cheap and powerful. But if everyone does it halfway, Europe ends up in the Trap, dependent but not important enough to matter. Players won’t know which zone they’re in until the reveal.

How It Plays

5 The players

Fifty roles in three categories. Each category holds what another one needs.

CATEGORY	PLAYERS	YOU START WITH	YOU WANT	YOUR BASE SCORE
Government	20	Budget cards	Capability cards	Total Capability you hold, plus half the Jobs your cards create in your home country
ESA	10	Award cards	Budget cards	Budget cards you hold
Company	20	Capability cards	Award cards	Award cards you hold

Who's at the table

GROUP	ROLES
Governments · 20	
France	FR-1 Minister of Armed Forces · FR-2 CNES Director · FR-3 Minister of Economy · FR-4 Elysee Space Advisor
Germany	DE-1 Bundeswehr Space Command · DE-2 DLR Director · DE-3 Federal Ministry of Economics · DE-4 Chancellery Advisor
United Kingdom	UK-1 UK Space Command · UK-2 UKSA Director · UK-3 Minister for Trade · UK-4 Foreign Office Advisor
Italy	IT-1 ASI President · IT-2 Defense Ministry Advisor · IT-3 Industry Ministry Official
Spain	ES-1 CDTI Director · ES-2 Defense Ministry Advisor
Nordic countries	NORD-1 Nordic Space Cooperation Chair
European Union	EU-1 European Commission Space Chief · EU-2 EU Space Programme Director
European Space Agency · 10	
ESA officials	ESA-1 Director General · ESA-2 Launcher Directorate Chief · ESA-3 Navigation Directorate Chief · ESA-4 Telecommunications Directorate Chief · ESA-5 Programs Directorate Chief · ESA-6 Space Safety Directorate Chief · ESA-7 Strategy & Planning Director · ESA-8 Member State Relations Director · ESA-9 Commercial Partnerships Director · ESA-10 International Relations Director
Companies · 20	12 at five prime contractors, 8 at five startups
Ariadne Spatial Prime · France	AS-1 Ariadne Spatial CEO · AS-2 Ariadne Spatial CTO · AS-3 Ariadne Spatial Government Relations
Luftwerk Defence Prime · UK and Germany	LW-1 Luftwerk Defence CEO · LW-2 Luftwerk Systems Division · LW-3 Luftwerk Government Relations
Tales Alenia Prime · France and Italy	TA-1 Tales Alenia CEO · TA-2 Tales Alenia Italian JV Director
OHBYE Prime · Germany	OB-1 OHBYE CEO · OB-2 OHBYE Systems Director

Da Vinci Aerospace Prime · Italy	DV-1 Da Vinci Aerospace CEO · DV-2 Da Vinci Electronics Division
Donau Aerospace Startup · Germany	DA-1 Donau Aerospace CEO · DA-2 Donau Aerospace Lead Investor
Rocket Werks Startup · Germany	RW-1 Rocket Werks CEO · RW-2 Rocket Werks Lead Investor
Frostbyte Imaging Startup · Finland	FB-1 Frostbyte CEO
Plaza Space Startup · Spain	PS-1 Plaza Space CEO
Startup Consortium Startup · France and Spain	SC-1 Startup Consortium Chair · SC-2 Startup Consortium Investor Rep

Name badges

Every player wears a badge. The **front** shows their role number, title and flag or company, color-coded by category, so compatriots and colleagues can find each other. The **back** is private: a short biography, what they want, how they score, and a **secret goal** with four tiers.

Big Boost multiplies the player's score by $\times 1.4$,
Small Boost by $\times 1.2$, **No Change** by $\times 1.0$, and
Hurts You by $\times 0.8$.

Many goals depend on what *other* players do,
which is what gets people talking to strangers.
All 50 badges are reproduced in Appendix A.

Badges are 5 × 7 inches. Print them double-sided
and hang them on lanyards so players can flip
them over privately.



6 The cards

Four kinds of cards. Three are the game's currencies; the fourth is the shortcut.



Budget
Governments' money



Award
ESA's contracts



Capability
What companies build



SpaceY
The American shortcut



Card back
The same on every card

CARD	WHO STARTS WITH IT	PER PLAYER	NEEDED	NOTES
Budget	Governments	6 starting + 6 booster	240	All identical. Each is worth 1.
Award	ESA officials	5 starting + 5 booster	100	All identical.
Capability	Companies	Primes 6 + 6 Startups 3–4 + 3–4	200	Every card is unique and numbered. Booster card numbers start with 0.
SpaceY	The facilitator	None	100 or more	Capability 5, Jobs 0, USA: better than any European card (they top out at 3), with no European jobs. Never packed: the banker holds the stack.

Reading a Capability card



Card number (top). Unique to the card. The first digits say which company made it: 1xx Ariadne Spatial, 2xx Luftwerk Defence, 3xx Tales Alenia, 4xx OHBYE, 5xx Da Vinci Aerospace, 6xx Donau Aerospace, 7xx Rocket Werks, 8xx Frostbyte Imaging, 9xx Plaza Space, 10xx the Startup Consortium. A leading 0 marks a booster card, so this one, **01013**, is a Startup Consortium booster card.

Capability (upper number, 1 to 3): how good the technology is.

Jobs (lower number, 1 to 3): how many jobs it creates.

Flag (bottom): the country where those jobs land.

Prime contractors' cards carry more jobs and less capability. Startups' cards carry more capability and fewer jobs. Across all 200 cards there are 359 points of capability and 441 jobs (Appendix C lists every card).

7 Trading and the SpaceY station

No turns, no table, no fixed prices. Just people, cards and a clock.

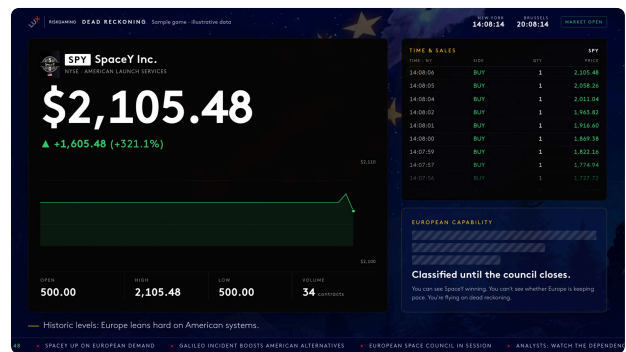
Trading

- **Trade with anyone, at whatever “price” you agree.** Three Budget for two Capability cards, an Award for a promise, anything goes.
- **Promises aren’t enforced.** Only the cards in hand at the end count.
- **Teams aren’t teams.** Countries and companies have several players, and they may want to work together—more likely than not their goals are mostly aligned. But everyone scores individually, and some secret goals pull compatriots in opposite directions.
- **Cards change hands freely,** SpaceY cards included. A government can sell its SpaceY cards to another government.
- **Mid-game, everyone gets a booster pack** of their starting currency, and the rules change for startups (chapter 11).

The SpaceY station

The SpaceY banker sits at a station near the screen with the stack of SpaceY cards.

- **1 Budget card = 1 SpaceY card.** No Award needed, no negotiation, instant. That’s SpaceY’s advantage: it skips the European bureaucracy.
- **The station is open to anyone, all the time.** In practice the buyers are governments: SpaceY adds to a government’s capability, while ESA officials and companies gain nothing from it in their own base score (though their purchases still move the meter).
- **Every purchase moves the market.** The banker records it in the scoring app, and the share price on the big screen ticks up: it opens at \$500.00 and rises \$47.22 with every card sold. Twenty cards take it to \$1,444.40, fifty to \$2,861.00.



The SpaceY market, on the big screen for the whole game. Sample game, illustrative data.

8 Scoring

Everyone scores individually: a base score, times their secret goal, with one twist for startups.

Base scores

WHO	BASE SCORE
Governments	Capability on every card you hold (each SpaceY card counts 5) + half the Jobs on your own cards that land in your home country (for NORD-1, Finland).
EU-1, EU-2	Capability you hold + half the average Jobs across Europe : all the jobs governments hold, divided by the six countries in the game.
ESA	The number of Budget cards you hold.
Companies	The number of Award cards you hold. Startup players must also survive (below).

Jobs only count once a government holds the card. A Capability card still in a company's hands, or left in someone's pocket, creates no jobs for anyone. SpaceY cards create none.

Secret goals

Every badge has a secret goal with four tiers. The tier a player reaches multiplies their base score: **×1.4** (Big Boost), **×1.2** (Small Boost), **×1.0** (No Change) or **×0.8** (Hurts You). Both numbers matter: a top-tier goal on a weak hand can lose to an untouched goal on a strong one.

Startups must survive

Each startup player's badge says they need **4 Awards** to survive. Mid-game, the Galileo Cascade raises that to **6 Awards per player** (the badges keep saying 4, on purpose: they are pre-crisis information). A startup player who ends below 6 Awards **scores 0**, whatever their goal. A startup *company* counts as surviving if any of its players reaches 6; that's what goals like "at least 2 startups survive" count.

Putting it together

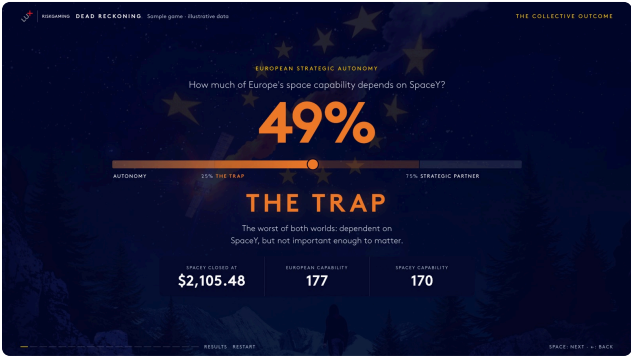
Final score = base score × secret goal × category factor. The category factor is ×1 for governments, ×2 for ESA and ×5 for companies. A government's base (capability plus jobs) is naturally several times larger than a count of cards, so the factors put all three categories on one overall leaderboard. Players don't need to know about them; they only matter for the overall champion.

EXAMPLE	WORKING	SCORE
A government (illustrative)	Holds four French cards with Capability 1, 2, 1, 2 and Jobs 3, 2, 3, 2, plus two SpaceY cards. Capability 6 + 10 = 16. French jobs 10, so the bonus is 5. Goal at Small Boost: $(16 + 5) \times 1.2 \times 1$	25.2
An ESA official (illustrative)	Holds 14 Budget cards, goal at No Change: $14 \times 1.0 \times 2$	28.0

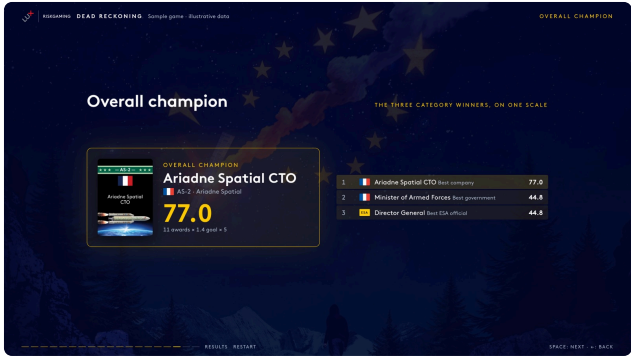
FB-1, Frostbyte CEO (Lux House SF, Oct 2026)	Held 12 Awards and hit the top tier: 12 × 1.4 × 5. The best company score that night.	84.0
DA-1, Donau CEO (same game)	Held 4 Awards: enough under the old rule, two short after the Galileo Cascade.	0

Winners

The reveal crowns the top government, the top ESA official and the top company executive, then the overall champion across all three. Superlatives along the way include SpaceY's Best Customer, European Patriot, Job Creator, Hometown Hero, Budget Magnet, Diversified Portfolio, Capability Leader and Efficiency Expert. The exact rule behind every goal, as the scoring app applies it, is in Appendix B. Equal scores share a place, and a tie for first makes joint winners.



The Dependency Meter lands. Sample game, illustrative data.



The overall champion. Sample game, illustrative data.

Running It

9 What you need

Everything for a full game of 50. The game kit includes print-ready files for all of it.

Printed materials

ITEM	QUANTITY	KIT FILE	NOTES
Name badges, double-sided	50	2 - Name Badges	5 × 7 in. Front and back on consecutive pages. Plus 50 lanyards or badge holders.
Capability cards	200	3 - Capability Cards	Print once: 23 sheets, every card unique.
Budget cards	240	4 - Budget Cards	Print 27 copies (243 cards).
Award cards	100	5 - Award Cards	Print 12 copies (108 cards).
SpaceY cards	100+	6 - SpaceY Cards	Print 12 copies (108 cards). The busiest game so far sold 95.
Card packets	100	7 - Packing Chart	Envelopes or card holders: one starting packet and one booster pack per player, each labelled with the role.
SpaceY station sign	1	—	Optional, but it helps the room find the shortcut.

Each card file is letter-size sheets of nine cards (2.2 × 3 in), with their backs on the following page. Print double-sided, then cut. All four files come to 74 sheets.

Technology

- **A projector or large screen** and a laptop or tablet to drive it. It shows the rules presentation, then the SpaceY market for the whole game, then the reveal.
- **One or more laptops or tablets** for the banker and for data entry at the end. A phone works in a pinch.
- **Internet for all of them.** The scoring app keeps every device in sync through the game code.
- **The scoring app**, linked from the scenario page at riskgaming.com/scenarios/dead-reckoning. It holds the rules presentation, the SpaceY market screen, the facilitator console and the reveal. Appendix D is a quick reference.
- Optional: a clicker for the slides, and a microphone for rooms of 40 or more.

People

ROLE	DOES
Lead facilitator	Presents the briefing, keeps time, makes the mid-game announcement, runs the reveal and the debrief. Circulates during play to answer rules questions and nudge stuck players.
SpaceY banker	Sells SpaceY cards and records every sale in the app the moment it happens. Plays the part: a little salesmanship helps.
Counting	The lead and the banker can enter the final counts themselves; one or two helpers make it faster. Split the roster: for example, one person takes governments, the other ESA and companies.

10 Before game day

Most of the work is packing, casting and a quick test of the app.

Print and pack

1. Print the badges and the cards, double-sided, with the number of copies in chapter 9.
2. Using the packing chart (also in Appendix C), make **two packets per role**: a starting packet and a booster pack. Governments get 6 Budget in each, ESA officials 5 Awards, and each company role its own numbered Capability cards.
3. Label every packet with its role (for example "FR-1 · starting"). Booster Capability cards are the ones whose numbers start with 0.
4. Keep the SpaceY cards apart. They never go in a packet.

Cast the roles

Assign badges as people arrive, rotating through governments, ESA and companies so the categories stay balanced.

Fewer than 50 players

The game has run well with as few as 28 players and as many as 50. With fewer than 50:

- **Keep the ratio near 2 : 1 : 2** (governments : ESA : companies).
- **Try to keep at least one player for every company and every country**, so every kind of card and every flag is in play.
- **Cut the later seats first**, such as FR-4, DE-4 and UK-4, the second Spanish and EU seats, the later ESA directorates, and second company seats.
- **Goals that count other players adjust themselves**. AS-3, LW-3, DV-2 and SC-2 only count the roles at the table, so empty seats don't make them impossible. The scoring app treats a seat as filled if anything was entered for it, so a company that wins no Awards and sells no cards counts as absent.
- **Leave an absent role's packets in the box**. Cards from a role nobody plays would enter the game without being counted. The scoring app simply ignores roles with nothing entered.

Set up the app

1. Open the scoring app, **sign in with Google** and **create a game**. You get a short game code. Anyone with the code can watch the game, but only you and the people you add can change it.
2. **Add your co-facilitators**, the SpaceY banker included: in the console's menu, choose **Helpers** and add the email each one uses for Google. They sign in on their own device and find the game in their list.
3. On each device, enter your name when the console asks who's at this laptop. Every change is then labelled with who made it.
4. On the screen laptop, open the presentation from the console's **Slides** button. Opened that way, its market and reveal slides are live, and the presenter view stays in sync from a second device such as an iPad.

5. Use the **Sections** switch (S) to choose what to present. Feel free to turn off “Lux & Riskgaming” if you’re not from Lux.
6. Do a dry run: record a SpaceY purchase, watch the screen move, then remove it.

The room

- Open floor space for mingling. Standing works better than seated: deals happen on the move.
- The SpaceY station near the screen, so every purchase happens in public.
- Optional: signs or flags where each country and company can gather at the start.

11 Run of show

A 90-minute evening, minute by minute. Timings are a guide: if you have two hours, give the extra time to trading and the debrief, and trim the briefing for returning players.

CLOCK	LENGTH	WHAT HAPPENS
-0:15	15 min	Doors. Hand out badges and lanyards. Players find their compatriots and colleagues.
0:00	5 min	Welcome; who Lux is and what Riskgaming is (optional section).
0:05	8 min	The story and the background talk.
0:13	10 min	How to play, then questions.
0:23	17 min	Round one. Hand out starting packets. Trading opens.
0:40	3 min	Mid-game. Announce the Galileo Cascade, then hand out the booster packs.
0:43	17 min	Round two. Time calls at 10, 5 and 2 minutes.
1:00	12 min	Final scoring. Stop trading, close the market, count every hand.
1:12	10 min	The reveal.
1:22	8 min+	Final thoughts and debrief.

Doors

Hand out badges as people arrive and tell them to find their compatriots. Starting packets stay with you until the rules are done, or people start trading through the briefing.

The briefing

Present from the app (chapter 10). Read the story at the “Story · 2027” slide (chapter 2), give the background talk (chapter 3), then walk through how to play. The deck covers the roles, the badges, the cards, the SpaceY station and market, the Dependency Meter, the goals and scoring, and ends with these reminders:

SAY THIS

Trade cards to whomever you want, at whatever price you want. Negotiate! The SpaceY booth is open to anyone, all the time: one Budget card for one SpaceY card. You’ll get a booster pack of new cards mid-game. Companies and countries may want to work together, but you score individually. And your secret goal matters, but so does your base score.

SAY THIS

One more thing. We play under Chatham House rules, plus: nobody should attribute a quote to any individual, especially since everyone here is role-playing someone else.

Round one

Hand out the starting packets. Switch the screen to the SpaceY market (press M) and leave it there.

SAY THIS

Trading is open. Find your partners. You'll see SpaceY's share price climb in real time. But you won't know Europe's total capability until we count at the end. You're flying blind. That's dead reckoning.

- Circulate. Answer rules questions, and steer confused players toward someone who needs what they hold.
- The banker records every SpaceY sale the moment it happens, so the price moves while the buyer is still standing there.
- Call out milestones now and then: "SpaceY just crossed \$2,000."

Mid-game: the Galileo Cascade, then booster packs

About halfway through, call the room to attention and show the "Mid-game cards" slide, then the Galileo Cascade slide. Read the announcement **before** anyone gets new cards: once players have a booster pack in hand, you won't get their attention back.

READ ALOUD: THE GALILEO CASCADE

"It's time to get your booster packs. But before you do: breaking news from the Galileo crisis."

"The EU has completed an emergency review of European space procurement. The findings are not good. SpaceY's growing market share, which, let's be honest, some of you in this room directly contributed to, has eroded European startup margins to the breaking point. And this morning, China's CNSA announced a relocation incentive program targeting European space startups. Three startup founders have already taken meetings at the Chinese embassy in Brussels."

"The EU's response: new due-diligence requirements for all startup contracts. Any startup company must now demonstrate stronger institutional commitment to remain viable. **The survival threshold is now 6 Award cards per player, not 4.**"

"Yes, your badges say 4. That was before the debris field. Before SpaceY's price dump. Before Beijing started making phone calls. The crisis changed the rules."

"ESA players: your award decisions just got a lot more consequential. Startup players: you need to start lobbying."

The badges say 4 on purpose: they are pre-crisis information. Don't reprint them with 6.

Round two

Hand out the booster packs, then go back to the market screen (M). Build the tension: "SpaceY is climbing... but is Europe keeping pace? You won't know until the end."

WHEN	SAY
10 minutes left	"The Council session ends in ten minutes. Final positions must be locked."
5 minutes left	"Five minutes. SpaceY is at \$[price]."
2 minutes left	"Two minutes. Finalize your holdings."
Time	" Stop. Trading is closed. Hold your cards. "

12 Final scoring and the reveal

Ten to fifteen minutes of counting, then the show. Counting is where games go wrong, so do it carefully.

Counting

1. **Close the market** in the console (Close market). The screen freezes at the closing price, and later SpaceY corrections won't move it.
2. **Count every hand.** Whoever is counting splits the roster and goes player by player:
 - **Governments** (EU and Nordic included) read out every Capability card number, then their SpaceY cards *in hand*. The console accepts "107" and "0107" as the same card.
 - **ESA officials** say how many Budget cards they hold.
 - **Companies** say how many Award cards they hold.
3. **Set each SpaceY count to the cards in hand**, not the purchases you recorded. SpaceY cards get traded, and only the ones held at the end count.
4. **Collect cards as you go**, by category, so the kit goes home sorted.
5. **Check the roster.** The console shows who has been entered. Anyone with nothing entered isn't scored.

From the tables. At Lux House in San Francisco, two people counted 49 players in about fifteen minutes. Eight SpaceY cards came off during the count, because hands didn't match the purchase log. That's normal: trust the hand.

The reveal

Move to the "Final scoring" slide, then to the reveal. Step through it with the arrow keys or a clicker. It runs in this order:

1. **The title:** where SpaceY closed. ("They had a great quarter in Europe.")
2. **The Dependency Meter** sweeps across the three zones and lands. Pause before it does.
3. **The story of the game**, told in a few beats.
4. **The jobs map:** where Europe's jobs landed, and how much each country captured.
5. **Superlatives**, one at a time.
6. **Category countdowns:** governments, ESA, then companies, from the bottom up.
7. **The overall champion.**
8. **The epilogue:** a roast and a verdict on what Europe chose.

When it's over, download the results from the reveal (Download CSV). The CSV is a receipt; the game itself stays in the app under its code.

13 The debrief

The reveal tells people what happened. The debrief is where they work out why.

Suggested questions

1. **The reveal.** Were you surprised by where the Dependency Meter landed? Did you expect Autonomy, the Trap or Strategic Partner?
2. **The SpaceY price.** You watched it climb in real time. At what point did you get nervous? Did anyone try to coordinate to stop buying?
3. **Dead reckoning.** You couldn't see European capability building, only SpaceY winning. How did that uncertainty change your decisions?
4. **The Trap.** If you landed between 25% and 75%, what would you have done differently? Could you have coordinated better?
5. **Jobs politics.** Which countries got the most jobs? Did the pressure to bring work home feel real? Were the smaller countries squeezed out?
6. **ESA's role.** Did ESA stay relevant, or did governments bypass it for SpaceY? Why?
7. **Startup survival.** Did Europe's startups survive? What does that say about innovation versus protecting incumbents?
8. **Real policy.** What does this tell us about actual European space policy? Which dynamics felt realistic, and which didn't?

Final thoughts

Close on the last slide's four points:

SAY THIS

Avoiding the Trap requires active coordination. Muddled compromises are easier than hard choices, and individual rationality can lead to collective failure.

Jobs are political; capability is technical. That tension explains why European procurement rarely optimizes for performance alone.

Even with good tech, startups need champions. Innovation doesn't survive on merit alone.

Dead reckoning is how Europe actually navigates. Policymakers and companies face the fog of bureaucracy.

14 Tips and troubleshooting

What to do when the room does something you didn't expect.

No one is trading

Broker a sample deal out loud: "France, you need capability. Ariadne, you need Awards. ESA, connect them!"
Remind people of the clock, and point at the market: "The Americans are waiting."

Everyone is buying SpaceY

That's a valid strategy, so don't stop it. Build the tension instead: "The price is climbing fast... you won't know whether Europe kept pace until the reveal."

No one is buying SpaceY

Also valid, but make sure people know the option exists. Sell to the room: "As a reminder, I've got cheap, high-capability cards right here!" Don't be shy about sending the banker around the room with the stack.

A run on the market

Purchases come in bursts. At Lux House, 38 SpaceY cards sold in three minutes. Narrate it ("SpaceY is having a very good afternoon"), and keep the banker entering every sale as it happens.

Startups are being ignored

Push startup players to pitch harder, and remind governments that startup cards carry the most capability per card. "German startups create German jobs..."

ESA players feel powerless

They control the Awards: no government gets European capability without going through ESA. The SpaceY bypass is real, but so is its jobs penalty. "Every SpaceY purchase is a European company not getting funded."

Someone is confused about their secret goal

Pull them aside and explain privately. The goal is on the back of their badge.

Players ask what the dependency is

"You can see SpaceY winning. You can't see European capability until we count at the end. That's the point: you're dead reckoning."

Counting is slow or the numbers look wrong

Split the roster between two people, close the market first, and count SpaceY from the hand, not from memory. If a card number won't enter, read it again: booster cards start with 0, and every card belongs to exactly one company range.

From the Tables

15 Four rooms, one trap

What happened in the four games played between February and October 2026.

	BETAWORKS NEW YORK	NYU GAME CENTER NEW YORK	CHATHAM HOUSE LONDON	LUX HOUSE SAN FRANCISCO
Date	12 Feb 2026	13 Feb 2026	26 Feb 2026	6 Oct 2026
Players scored	40	30	28	49
SpaceY cards held at the end	53	23	47	87
Dependency	52%	39%	64%	61%
Zone	The Trap	The Trap	The Trap	The Trap
Startup companies surviving (of 5)	5	4	3	5
Overall winner	UK-1, 90.3	FR-3, 80.5	FR-3, 70.0	FR-4, 93.1

The three February games were scored on the day with earlier versions of the rules (company scores $\times 3$ in the first two, and different goal thresholds), so their winners are as announced in the room. The Lux House game used the current rules. But the overall conclusions are largely the same.

What stands out

- **Every room fell into the Trap.** Dependency has landed between 39% and 64%. No room has come close to Autonomy, and none has gone all-in on SpaceY either.
- **The winners bought American.** Every overall champion so far was a government holding SpaceY cards (10, 10, 6 and 8 of them). One SpaceY card is worth 5 capability; at Lux House the average European card in a government's hand was worth 1.8.
- **The sovereignty hawks tend to lose.** DE-1 and EU-2, who need dependency below 30% for their top tier, and FR-2, who needs French hands free of SpaceY, have ended at $\times 0.8$ in every game they've played.
- **Startups live or die by ESA.** At Lux House all five startup companies survived, but three startup players fell short of the new 6-Award line and scored 0. One of them had 4 Awards, which would have been enough before the Galileo Cascade.
- **A startup can win.** At Lux House, Frostbyte's CEO (FB-1) won the company category with 84.0, the first startup player to do it.

Tip. Sharing these results in the debrief works well, especially the "every room fell into the Trap" line. It turns one evening's outcome into a pattern.

Reference

A The 50 characters

Every badge, as printed: the role, the biography, the secret goal and its four tiers.

Tiers run from Big Boost (×1.4) through Small Boost (×1.2) and No Change (×1.0) to Hurts You (×0.8). Notes in red mark where the printed badge and the scoring differ, and why.

Governments

Score: Total Capability + half the Jobs in your home country (EU-1 and EU-2: “half the Jobs across Europe”, see notes).

FR-1 Minister of Armed Forces

You did not spend twenty years climbing the ranks of the French military to watch Europe outsource its security to a Texan with a Twitter addiction. The Galileo incident confirmed what you have always known: sovereignty is not a budget line item, it's survival. Your colleagues in Berlin talk about “strategic autonomy” at conferences; you actually mean it. The Americans are not allies in space, they are competitors who happen to share a treaty. If France does not lead European defense, no one will. And if that means French companies get French contracts, well, that is just good industrial policy.

Secret goal: French Industrial Champion

×1.4 France has most Jobs

×1.2 France top 2 in Jobs

×1.0 France top 3

×0.8 France bottom half

FR-2 CNES Director

You have given thirty years to the cause of European launch independence. You watched Ariadne 4 dominate the market. You watched Ariadne 5 struggle. You shepherded Ariadne 6 through a decade of delays and budget fights. And now some American startup is eating your lunch because they figured out how to land a rocket on a boat. The physics, honestly, are not that impressive, but the marketing is. Every time a European government buys SpaceY, it's a vote of no confidence in everything you've built. You don't have to be a hardcore nationalist to believe you shouldn't have to ask Washington for permission to reach orbit.

Secret goal: No American Launches

×1.4 Zero SpaceY cards held by any French player

×1.2 Only 1 SpaceY card among French players

×1.0 2 SpaceY cards

×0.8 3+ SpaceY cards

FR-3 Minister of Economy

You are a true pragmatist surrounded by romantics. It shouldn't be surprising in France, but you sigh as your colleagues give lip service to “European champions” and “strategic autonomy” while burning through billions on rockets that cost three times the competition. Someone has to ask the uncomfortable questions. What exactly are we buying with all this sovereignty? The Americans put a car in orbit just for giggles. Meanwhile, Ariadne can't hit a launch window without a budget extension. It's not that you're anti-European, it's that you're anti-waste. If a European system delivers genuine capability at reasonable cost, wonderful. If not, perhaps the taxpayers deserve better than pricey flags in space.

Secret goal: Cost Efficiency

×1.4 Your Capability cards average 2.5+ Cap value

×1.2 Average 2.0+

×1.0 Average 1.5+

×0.8 Average below 1.5

FR-4 Elysee Space Advisor

The President trusts you because you understand that space policy is not really about space, it's about France. It is about ensuring that when Europe builds something important, the headquarters is in Paris and the factories are in Toulouse. The Germans think they can buy their way to leadership with checkbook diplomacy. They are wrong. Leadership requires vision, and vision requires someone willing to actually lead. You have watched too many European projects become German projects with French participation. Not this time. Whatever emerges from this crisis, France will be driving.

Secret goal: French Leadership

×1.4 France has more Jobs than Germany

×1.2 France tied with Germany in Jobs

×1.0 France within top 3 countries in Jobs

×0.8 France outside top 3 in Jobs

DE-1 Bundeswehr Space Command

You have spent your career watching NATO exercises where American satellites provide all the targeting, all the communications, all the intelligence. Your European colleagues nod along like this is normal. Perhaps it is normal, but you also think it's dangerous. It is dependency dressed up as alliance. The Galileo incident was a preview: when the Americans choose not to share, Europe is blind. Your job is to defend Germany. That requires capabilities Germany controls, not capabilities Washington can switch off during a trade dispute. Just look at their current president! The other generals think you are paranoid. You think they have not read enough history.

Secret goal: Strategic Autonomy

×1.4 Dependency Meter below 30%

×1.2 Below 40%

×1.0 Below 50%

×0.8 50%+

DE-2 DLR Director

German engineering, you like to remind everyone, put a man on the moon. Well, German-American engineering, but the important part was German. You run the aerospace research center that trained half of Europe's astronauts and built half of Europe's satellites. The idea that German technology cannot compete with SpaceY is both wrong and insulting. The problem is not capability. The problem is that European procurement moves at the speed of committee consensus while Americans move at the speed of venture capital. Given proper support, German industry can build anything. Your job is to make sure the politicians understand that before they give up and buy American.

Secret goal: Technical Excellence

×1.4 Your Capability cards average 2.5+ Cap value

×1.2 Average 2.0+

×1.0 Average 1.5+

×0.8 Average below 1.5

DE-3 Federal Ministry of Economics

Every euro spent on space is a euro that could employ German workers or fund German research or support German industry. Why is it that "European cooperation" somehow always results in French companies winning French contracts while Germany writes the checks. The Ariadne program was supposed to be balanced. It was not. The next generation of European space infrastructure must be different, or Germany will find other partners. After all, your voters don't care about flags on rockets. They care about jobs in Bavaria and Bremen.

Secret goal: German Jobs

×1.4 Germany has most Jobs

×1.2 Germany top 2

×1.0 Germany top 3

×0.8 Germany bottom half

DE-4 Chancellery Advisor

Coalition politics, in your view, is the art of giving everyone just enough to keep them from walking away. You have watched three chancellors navigate European partnerships, and the pattern is always the same: France wants glory, Italy wants contracts, the small countries want relevance, and Germany wants everyone to stop fighting. You also believe every crisis is an opportunity, including this one, but only if Europe can agree on a response. That means spreading the benefits, managing the egos, and convincing everyone that collective action serves national interests. You are very good at this. You have to be. The alternative is twenty-seven countries pursuing twenty-seven different space strategies.

Secret goal: European Solidarity

×1.4 At least 5 countries have 5%+ of total Jobs each

×1.2 At least 4 countries have 5%+ each

×1.0 At least 3 countries have 5%+ each

×0.8 Jobs concentrated in 1-2 countries

UK-1 UK Space Command

Five Eyes is not merely an intelligence alliance. It is an acknowledgment that some relationships matter more than geography. You have spent your career building connections with American counterparts who share information Europe never sees. That access is worth more than any satellite Europe might build. Your colleagues talk about “European defense identity” like it is a real thing. It is a French talking point. Let’s be honest, when the crisis hits, when the chips are down, Britain calls Washington, not Brussels. The trick is maintaining access to both clubs without fully committing to either. Brexit made it more complicated, but not impossible. This is your dance. Good thing you enjoy tango.

Secret goal: Atlantic Alliance

- | | |
|------|--|
| ×1.4 | You hold more SpaceY cards than European cards |
| ×1.2 | Equal SpaceY and European |
| ×1.0 | Fewer SpaceY but at least 1 |
| ×0.8 | Zero SpaceY cards |

UK-2 UKSA Director

Brexit was supposed to liberate British space from European bureaucracy. Instead, it liberated British space from European funding. Your budget is a rounding error compared to CNES, and your American friends are happy to sell but not to partner. You need wins. Actual, demonstrable proof that Britain can still play at this level. The Galileo incident is an opportunity: Europe is scared, budgets are loosening, and everyone suddenly wants to talk about resilience and redundancy. The Europeans are welcome to spend twice as much for half the capability in the name of sovereignty. Britain will spend wisely and prove it can compete with anyone. If you can position British capabilities as part of the solution, maybe you can rebuild what Brexit dismantled. If not, you are managing decline.

Secret goal: UK Relevance

- | | |
|------|--|
| ×1.4 | UK players hold more total Capability than any single EU country |
| ×1.2 | UK holds more than Italy or Spain |
| ×1.0 | UK holds more than smaller countries |
| ×0.8 | UK holds least of any country |

UK-3 Minister for Trade

Brexit was supposed to unleash British industry, and you intend to prove it. Your job is to champion UK aerospace companies in every negotiation, every contract, every opportunity. The Luftwerk satellites built in Stevenage, the components manufactured in Harwell, the services designed in Glasgow—these are world-class, and they deserve world-class contracts. The French protect their industry. The Germans protect theirs. Britain will do the same, just more cleverly. Every contract that goes to a British company means British jobs, British expertise, and British leverage. The space sector is growing. Britain should be growing with it.

Secret goal: Brexit Dividend

- | | |
|------|-----------------------------------|
| ×1.4 | UK has at least 10% of total Jobs |
| ×1.2 | UK has at least 5% of total Jobs |
| ×1.0 | UK has at least 1% of total Jobs |
| ×0.8 | UK has 0 Jobs |

UK-4 Foreign Office Advisor

The Americans need a European partner who actually understands them. The Europeans need someone who can translate Washington’s intentions. Britain is the obvious bridge, positioned between two worlds, trusted by both, fully committed to neither. Your job is to maintain that position, which means being useful to everyone without becoming captive to anyone. The Galileo crisis is a test: can Britain help broker a solution that keeps Europe relevant without threatening American dominance? If you get this right, Britain becomes indispensable. If you get it wrong, you become irrelevant to both sides.

Secret goal: The Bridge

- | | |
|------|---|
| ×1.4 | UK government players collectively hold at least 25% SpaceY AND at least 25% European among their cards |
| ×1.2 | UK players hold at least one SpaceY AND at least one European |
| ×1.0 | UK players hold only one type |
| ×0.8 | UK players hold no Capability cards |

IT-1 ASI President

Italy has been building satellites since before SpaceY's founder was born. Your space agency launched Europe's first satellite (Europe properly understood, anyway). Your companies build critical systems for every major European program. And yet somehow, every time budgets are allocated, France and Germany divide the pie while Italy gets the crumbs. The Galileo incident changes the math. Europe needs manufacturing capacity, technical expertise, and political support from the south. You intend to make sure Italy's contributions are finally recognized with contracts that match your capabilities. No more being Europe's grateful junior partner.

Secret goal: Italian Presence

- | | |
|------|---------------------------------------|
| ×1.4 | Italy has at least 15% of total Jobs |
| ×1.2 | Italy has at least 10% of total Jobs |
| ×1.0 | Italy has at least 5% of total Jobs |
| ×0.8 | Italy has fewer than 5% of total Jobs |

IT-2 Defense Ministry Advisor

The Mediterranean is not a French lake, whatever Paris might believe. Italy faces threats that northern Europe ignores: migration, instability in North Africa, competition from Turkey. Your defense priorities require space capabilities optimized for southern Europe, not systems designed around German industrial policy or French prestige projects. You have watched too many European programs become vehicles for Franco-German dominance. This crisis is an opportunity to build something more balanced. If Europe cannot deliver equitable participation, Italy has other options. Sovereignty cuts both ways.

Secret goal: Fair Distribution

- | | |
|------|---|
| ×1.4 | No single country has more than 30% of total Jobs |
| ×1.2 | No country above 40% |
| ×1.0 | No country above 50% |
| ×0.8 | One country dominates with 50%+ |

IT-3 Industry Ministry Official

Italian aerospace is a true treasure that the rest of Europe chronically undervalues. Your companies build the systems that make European satellites work, but the prime contracts always seem to go elsewhere. This is not about charity. Italian industry competes on quality, not price. The Galileo incident has exposed Europe's fragility and created demand for new capabilities. You intend to make sure Italian companies are positioned to capture their fair share. Not because it is polite, but because Italian capability is genuinely excellent, and it is time the contracts reflected that.

Secret goal: Capability Leader

- | | |
|------|--|
| ×1.4 | Italian government players collectively hold more total Capability than any other country's government players |
| ×1.2 | Italian government players are top 2 in total Capability held |
| ×1.0 | Italian government players are top 3 in total Capability held |
| ×0.8 | Italian government players are bottom half in total Capability held |

ES-1 CDTI Director

Spain is tired of being Europe's afterthought. Your country has engineers, facilities, and ambition. What you lack is respect. The big three carve up every program before Madrid even gets a seat at the table. But times are changing. Spanish startups are building rockets. Spanish companies are winning contracts. The old order assumed Spain would always be a customer, never a competitor. They were wrong. The Galileo crisis is your moment to prove that European space needs Spain as a full partner, not a junior participant grateful for whatever scraps France and Germany leave behind.

Secret goal: Spanish Emergence

- | | |
|------|-------------------------------------|
| ×1.4 | Spain has at least 3% of total Jobs |
| ×1.2 | Spain has at least 1% of total Jobs |
| ×1.0 | Spain has any Jobs |
| ×0.8 | Spain has 0 Jobs |

ES-2 Defense Ministry Advisor

Spain's military needs modern capabilities, not European politics. Your forces operate across the Mediterranean and Atlantic, supporting NATO missions that your northern allies prefer to ignore. When you need satellite imagery or secure communications, you need systems that work, not systems that preserve someone else's industrial base. The Europeans talk about sovereignty, but Spanish sovereignty means having the capabilities Spain needs, regardless of who builds them. If European options deliver, wonderful. If not, you will find alternatives. Your job is defense, not economic development for France and Germany.

Secret goal: Modern Fleet

- | | |
|------|---|
| ×1.4 | You hold at least 2 cards with Capability value 3 |
| ×1.2 | You hold at least 1 card with Cap 3 |
| ×1.0 | You hold cards averaging 2.0+ Cap |
| ×0.8 | Your cards average below 2.0 Cap |
-

NORD-1 Nordic Space Cooperation Chair

You represent four countries that figured out long ago that cooperation beats competition. The Nordic model works: shared facilities, joint programs, practical results without the ego. You watch France and Germany fight over leadership while smaller countries build actual capabilities. The Galileo crisis is a test of whether Europe can learn from Nordic pragmatism. You support European autonomy, but not at any price. Startups deserve a chance. Small countries deserve seats at the table. If this crisis produces another Franco-German stitch-up, you will have some difficult conversations with your ministers about where Nordic space money should actually go.

Secret goal: Northern Innovation

- | | |
|------|--|
| ×1.4 | At least one startup survives AND Nordics have at least 2% of total Jobs |
| ×1.2 | At least one startup survives |
| ×1.0 | No startups survive but Dependency below 40% |
| ×0.8 | No startups survive and Dependency above 40% |
-

EU-1 European Commission Space Chief

You oversee sixteen billion euros of European space investment, and your job is to make sure it serves Europe, not just the biggest member states with the loudest voices. The Galileo incident has got everyone into a tizzy demanding European autonomous capabilities. But you know the truth: EU cooperation is fragile, and based entirely on spreading the wealth and geo-locating jobs. No jobs means no money come next year—and even though the big players are, well, big, the small players are too when you add them in the aggregate. Your French colleagues want French contracts. Your German colleagues want German jobs. Your job is to make sure everyone shares so that this collaboration continues to exist.

Secret goal: Balanced European Growth

- | | |
|------|--|
| ×1.4 | At least 5 EU countries (excluding UK) each have 5%+ of total Jobs |
| ×1.2 | At least 4 EU countries each have 5%+ |
| ×1.0 | At least 3 EU countries each have 5%+ |
| ×0.8 | Jobs concentrated in 1-2 countries |
-

The badge says "half the Jobs across Europe". The score uses half the average: all the jobs governments hold, divided by the six countries.

EU-2 EU Space Programme Director

Galileo, Copernicus, GOVSATCOM. You manage the crown jewels of European space, and you have watched member states slowly lose faith in the project. Every year, a few more contracts go to SpaceX. Every year, the dependency math gets worse. The member states tell you they support European autonomy, then quietly buy American because it is faster and cheaper. Your job is to make European programs competitive enough that sovereignty stops being a sacrifice. The Galileo incident might finally convince people that dependency has costs. Or they might panic and buy even more American. You have seen it go both ways.

Secret goal: European Strategic Autonomy

- | | |
|------|----------------------|
| ×1.4 | Dependency below 30% |
| ×1.2 | Below 40% |
| ×1.0 | Below 50% |
| ×0.8 | 50%+ |
-

The badge says "half the Jobs across Europe". The score uses half the average: all the jobs governments hold, divided by the six countries.

ESA officials

Score: Total Budget Cards held.

ESA-1 Director General

Twenty-three member states. Twenty-three space ministers. Twenty-three different definitions of "European interest." Your job is to keep them all happy enough to keep writing checks. The Galileo incident has every capital demanding action, but they cannot agree on what action means. France wants French solutions. Germany wants German contracts. The small countries want a seat at the table. The Americans are circling like sharks who smell budget allocation in the water. You have spent your career building consensus out of chaos. This crisis will test whether that skill translates to actual results or merely elegant communiques that everyone ignores.

Secret goal: Broad Coalition

- ×1.4 Awards spread across 5+ countries
- ×1.2 Across 4 countries
- ×1.0 Across 3 countries
- ×0.8 Concentrated in 1-2 countries

ESA-2 Launcher Directorate Chief

You are the guardian of European launch independence, and the barbarians are at the gate. Every SpaceY purchase is a knife in your back. Every minister who "just needs something launched quickly" is betraying thirty years of investment in Ariadne. The Americans want Europe dependent on their rockets. They will offer low prices until European launch capability withers, then raise them. You have seen this playbook before in other industries. Your job is to keep Ariadne alive long enough for the European Launcher Challenge to bear fruit. Europe needs to remember why it built domestic launch in the first place. The Galileo incident should be a wake-up call. You intend to make sure it is.

Secret goal: European Launch

- ×1.4 SpaceY Capability is less than 10% of total Capability held by governments
- ×1.2 SpaceY is 10-20% of total
- ×1.0 SpaceY is 20-30% of total
- ×0.8 SpaceY is more than 30% of total

ESA-3 Navigation Directorate Chief

Galileo was your life's work. You spent fifteen years building the system that was supposed to free Europe from GPS dependency. And now it is degraded, possibly sabotaged, definitely embarrassing. The official story blames debris, but you have seen the telemetry. Something is wrong. Your colleagues want to move on, focus on rebuilding, avoid uncomfortable questions about what actually happened. You want answers. More importantly, you want a successor system robust enough that this never happens again. Europe needs navigation independence. The crisis proves it. Your job is to make sure the response matches the scale of the problem.

Secret goal: Galileo Successor

- ×1.4 European Capability held by governments is at least 50% of all European Capability in play
- ×1.2 At least 35% of European Capability reaches governments
- ×1.0 At least 20% of European Capability reaches governments
- ×0.8 Fewer than 20% of European Capability reaches governments

ESA-4 Telecommunications Directorate Chief

Starwink has nine thousand satellites in orbit. Your European constellation has thirty-seven. The math is not complicated. Every year the gap widens, and every year your ministers express "concern" while approving budgets that guarantee continued irrelevance. The Galileo incident has created a moment of clarity. Europe finally understands what dependency means. Your job is to channel that fear into funding before it fades. If this crisis produces another study group and a five-year roadmap, you will have failed. Europe needs telecommunications capability that does not route through American data centers. You have maybe eighteen months to make it happen.

Secret goal: European Alternative

- ×1.4 European Capability exceeds SpaceY Capability overall
- ×1.2 European equals SpaceY
- ×1.0 European trails but Dependency below 50%
- ×0.8 SpaceY dominates

ESA-5 Programs Directorate Chief

You manage the money that keeps the European space industry alive. Every contract you award determines which companies survive and which ones become American subsidiaries. The pressure is relentless: France wants French winners, Germany wants German jobs, Italy wants recognition, and everyone wants you to somehow make the math work. The Galileo crisis has loosened budgets, which means more money to distribute and more politics to navigate. Your job is to ensure European industry emerges from this crisis stronger, not consolidated into two French-German champions while everyone else starves. Diversity is resilience. Monopoly is fragility.

Secret goal: Program Survival

- | | |
|------|---|
| ×1.4 | At least 3 European primes each hold 10%+ of total Awards distributed to primes |
| ×1.2 | At least 2 primes each hold 10%+ |
| ×1.0 | At least 2 primes each hold 5%+ |
| ×0.8 | Fewer than 2 primes hold 5%+ |
-

ESA-6 Space Safety Directorate Chief

The Galileo incident validated everything you have warned about for years. Debris, cyber threats, hostile actors treating space as a domain for competition. Your colleagues thought you were paranoid, but now, well, now they are asking for briefings. Finally. Your job has always been space situational awareness, which means tracking everything in orbit and predicting what happens next. The Americans share some data. The Russians share nothing. The Chinese smile politely. Europe is flying partially blind in an increasingly crowded sky. The crisis has created appetite for investment in safety and security. You intend to make sure that appetite translates into new companies and capabilities before the next incident.

Secret goal: Comprehensive Security

- | | |
|------|---|
| ×1.4 | Dependency below 30% AND at least 2 startups survive |
| ×1.2 | Dependency below 40% OR at least 2 startups survive |
| ×1.0 | At least 20% of European Capability reaches governments |
| ×0.8 | Fewer than 20% of European Capability reaches governments |
-

ESA-7 Strategy & Planning Director

You think in decades while everyone else thinks in quarterly budget cycles. Your job is to figure out where European space needs to be in 2040 and work backward to what that requires today. The answer is, well, not exactly comforting. Current trajectories lead to permanent American dominance in commercial space, with Europe reduced to a customer with pretensions, and one of many. Changing that trajectory requires sustained investment in industrial capabilities that will not pay off for years. Politicians hate that pitch. The Galileo crisis creates a window for long-term thinking. Whether that window stays open depends on whether fear outlasts the news cycle.

Secret goal: Industrial Base

- | | |
|------|---|
| ×1.4 | At least 3 European primes each hold 10%+ of total Awards distributed to primes |
| ×1.2 | At least 2 primes each hold 10%+ |
| ×1.0 | At least 2 primes each hold 5%+ |
| ×0.8 | Fewer than 2 primes hold 5%+ |
-

ESA-8 Member State Relations Director

Diplomacy is your actual job title, though “therapist for national egos” would be more accurate. When France feels disrespected, you listen. When Germany feels overcharged, you sympathize. When Spain feels ignored, you schedule meetings. The entire ESA system runs on the fiction that every member state matters equally. Your job is to maintain that fiction while somehow ensuring that decisions actually get made. The Galileo crisis has everyone’s emotions running high, which means your skills are in demand. The risk is that heightened stakes produce paralysis instead of action. Twenty-two countries agreeing quickly is not historically Europe’s strength.

Secret goal: No Monopoly

- | | |
|------|---|
| ×1.4 | No single company has more than 25% of total Awards |
| ×1.2 | No company above 33% |
| ×1.0 | No company above 40% |
| ×0.8 | One company above 40% |
-

ESA-9 Commercial Partnerships Director

The old model is dying. Government programs funded through juste retour, contracts distributed by political formula, innovation measured in decades. SpaceY proved that commercial approaches can move at the pace of innovation. Your job is to bring some of that energy to ESA without destroying the political consensus that keeps member states paying. Startups are your portfolio. Young companies with new ideas that challenge the established primes. The old guard sees them as threats. You see them as survival. If Europe cannot innovate, it will become a museum. The crisis creates opportunity for new players, and your job is to make sure they get a fair shot.

Secret goal: Startup Ecosystem

x1.4 At least 3 startups survive (4+ Awards each)

x1.2 2 startups survive

x1.0 1 startup survives

x0.8 0 startups survive

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: At least 3 startup companies survive (a company survives if any of its players has 6+ Awards) → x1.4 · 2 startups survive → x1.2 · 1 startup survives → x1.0 · 0 startups survive → x0.8

ESA-10 International Relations Director

NASA is a partner when convenient and a competitor when not. JAXA is polite but increasingly aligned with American priorities. China wants cooperation on terms that would compromise European independence. Your job is to navigate these relationships while maintaining the fiction that space cooperation transcends geopolitics. It does not. Every partnership involves tradeoffs, dependencies, and leverage. The Galileo incident has revealed how little leverage Europe actually has when things go wrong. Your colleagues want closer ties with Washington. You want relationships that do not leave Europe hostage to American domestic politics.

Secret goal: Balanced Dependency

x1.4 Dependency between 20-40% (autonomy with some partnership)

x1.2 Dependency between 15-50%

x1.0 Dependency between 10-60%

x0.8 Dependency at extremes (below 10% or above 60%)

Companies

Score: Total Award Cards held.

AS-1 Ariadne Spatial CEO

Your grandfather worked on the original Europa rocket. Your father ran Ariadne's engine division. You were raised to believe that European launch independence is a sacred mission, and SpaceY is the enemy. This is not business. This is war. The Americans want to destroy European launch capability and turn the continent into a captive market. Every contract Ariadne loses is a step toward that future. Your factories employ twelve thousand people across France. Your supply chain touches every region. Politicians understand those numbers. Your job is to make sure they remember them when procurement decisions get made.

Secret goal: Market Leader

- ×1.4 Ariadne Spatial has most Awards among all companies
- ×1.2 Ariadne top 2
- ×1.0 Ariadne top 3
- ×0.8 Ariadne outside top 3

AS-2 Ariadne Spatial CTO

You are an engineer surrounded by politicians. The technical problems with Ariadne 6 are solvable, but the political problems might not be. Look, your rockets work. They are reliable, proven, designed to European specifications. They are also expensive, because European labor costs serious Euros and European quality standards require documentation that American startups straight-up skip. Plus, you secretly admire SpaceY's engineering. Their reusability approach is elegant. But admiration does not pay salaries, and certainly not yours. Your job is to keep Ariadne competitive long enough to implement the innovations that will close the gap—assuming the politicians give you the runway.

Secret goal: Market Dominance

- ×1.4 Ariadne has more Awards than any other company
- ×1.2 Ariadne tied for most Awards
- ×1.0 Ariadne is top 3 among all companies in Awards
- ×0.8 Ariadne is outside top 3

AS-3 Ariadne Spatial Government Relations

You know every space minister's chief of staff by first name. You know which MEPs care about jobs in their districts and which ones care about abstract principles. You know exactly how much money Ariadne contributes to the French economy and exactly how to present that number for maximum political impact. Lobbying is an ugly word for essential work. Someone has to translate industrial interests into political language. The Galileo crisis has opened budgets and created fear, especially in France. Your job is to make sure that fear translates into Ariadne contracts from the country that ought to care most—before the moment passes.

Secret goal: French Government Loyalty

- ×1.4 All French government players hold at least 1 Ariadne Capability card
- ×1.2 3 of 4 French players hold Ariadne
- ×1.0 2 of 4
- ×0.8 Fewer than 2

LW-1 Luftwerk Defence CEO

You run Europe's largest aerospace company, a sprawling empire of divisions, subsidiaries, and national sensitivities assembled through decades of mergers and political compromises. Your British headquarters answers to British politicians. Your German division answers to German politicians. Your French partners answer to French aristocrats (ok, politicians). Managing this complexity is your competitive advantage. No startup can navigate European procurement politics the way Luftwerk can. The Galileo crisis threatens to fragment the European market into national champions. Your job is to ensure that Luftwerk emerges as the consolidator, absorbing weaker players while maintaining political support across borders.

Secret goal: Prime Consolidation

- ×1.4 Luftwerk has more Awards than any other prime
- ×1.2 Luftwerk tied for most
- ×1.0 Luftwerk in top 2
- ×0.8 Luftwerk outside top 2

LW-2 Luftwerk Systems Division

The Galileo replacement will be the largest European space program in a generation. Your division builds exactly the systems it will require. This is your moment. Twenty years of patient capability building, strategic acquisitions, and technology investment have positioned Luftwerk to capture the core contracts. The French will fight for their share. The Italians will demand participation. Your job is to make sure that when the dust settles, Luftwerk builds the systems that matter. Not the decorative subsystems that politicians hand out for votes. The actual capabilities that make the constellation work.

Secret goal: British Engineering

×1.4 Luftwerk has more Awards than any other prime

×1.2 Luftwerk is top 2 among primes

×1.0 Luftwerk is top 3 among primes

×0.8 Luftwerk is outside top 3 among primes

LW-3 Luftwerk Government Relations

Berlin is not Paris, and neither is London. German and British politicians do not understand space the way the French do. They see it as an expense, not an investment. Your job is to educate them, one ministry meeting at a time. The Galileo incident, as awful as it is, helps you. Suddenly everyone wants briefings on “strategic autonomy” and “critical infrastructure.” You have been giving those briefings for years to yawns and empty rooms. Now the rooms are full. Your challenge is converting momentary attention into sustained political support. German and British industry need German and British government contracts to compete with French-subsidized competitors. The logic is obvious. Making politicians act on it is harder.

Secret goal: German & British Support

×1.4 All German and British government players hold at least 1 Luftwerk Capability card

×1.2 75% of German & British players hold Luftwerk

×1.0 50% of German & British players

×0.8 Fewer than 50%

TA-1 Tales Alenia CEO

You run a joint venture between French and Italian parents who agree on almost nothing. Your French shareholders want French contracts. Your Italian shareholders want Italian recognition. Your job is to keep both sides happy while somehow running an actual business. The diplomatic skills required exceed what most ambassadors possess. The Galileo crisis creates opportunity, as all crises do, but only if you can present a unified face to customers. Internal fighting over work share is exhausting, but external fighting over contracts is necessary. Your competitive advantage is geographic diversity. Although, your competitive disadvantage is that diversity requires constant management.

Secret goal: Dual Nationality

×1.4 Tales Alenia cards are held by both French AND Italian government players

×1.2 Tales Alenia cards held by French OR Italian government players

×1.0 Tales Alenia cards held by other governments only

×0.8 No Tales Alenia cards held by any government

TA-2 Tales Alenia Italian JV Director

You run the Italian side of a “joint venture” where French partners somehow always get the better contracts. The rhetoric is equality. The reality is that Toulouse makes decisions and Rome implements them. You are tired of being the junior partner. Italian aerospace has capabilities that match or exceed French equivalents, but the political dynamics always favor Paris. The Galileo crisis is an opportunity to rebalance. Italy is a major ESA contributor. Italy deserves major program roles. Your job is to make sure that Tales Alenia’s Italian operations capture their fair share, even if that means fighting your French colleagues.

Secret goal: Italian Recognition

×1.4 Italy has more Jobs than France

×1.2 Italy tied with France in Jobs

×1.0 Italy is top 3 in Jobs

×0.8 Italy is outside top 3 in Jobs

OB-1 OHBYE CEO

You built this company by being cheaper and faster than the established primes. While Ariadne and Luftwerk fought over prestige projects, OHBYE won contracts by actually delivering on time and under budget. Your competitors call you a “mid-size player” like it is an insult. You call it a business model. Better than being a mega or a minnow. The European space market has often rewarded political connections over performance, but that system is starting to crack. Cost overruns on flagship programs have embarrassed ministers. SpaceY has demonstrated that efficiency matters. Your job is to position OHBYE as the alternative to bloated incumbents. The crisis creates demand for competence over pedigree.

Secret goal: Giant Killer

×1.4 OHBYE has more Awards than Ariadne Spatial

×1.2 OHBYE tied with Ariadne

×1.0 OHBYE is top 3 among primes

×0.8 OHBYE is outside top 3 among primes

OB-2 OHBYE Systems Director

German engineering is a cliché because it’s true. Your teams deliver quality that French and Italian competitors match only with twice the budget. The problem is that quality does not win contracts in European space. Political relationships win contracts. ESA procurement is a theater where technical evaluation plays a supporting role to industrial policy. You find this infuriating. The Galileo incident might change the calculus. When systems fail, people suddenly care about who builds them. Your job is to make sure OHBYE’s technical reputation translates into contract wins before the crisis fades and politics resume their usual dominance.

Secret goal: German Efficiency

×1.4 German companies (OHBYE + Donau + Rocket Werks) collectively have more Awards than any other national grouping

×1.2 German companies are top 2 among national groupings

×1.0 German companies are top 3 among national groupings

×0.8 German companies are outside top 3

DV-1 Da Vinci Aerospace CEO

Your company has been building Italian aerospace capabilities since before the EU existed. Governments come and go. Da Vinci endures. You have survived consolidation waves, budget cuts, and French attempts to absorb Italian industry into their orbit. The secret is political relationships. Every Italian government needs Da Vinci because Da Vinci employs voters in districts that matter. The Galileo crisis threatens that cozy arrangement. If European procurement consolidates around Franco-German champions, Italian industry becomes a subcontractor. Your job is to prevent that future by securing contracts that keep Da Vinci relevant and Italian politicians happy.

Secret goal: Italian Champion

×1.4 Da Vinci has more Awards than Tales Alenia

×1.2 Da Vinci tied with Tales Alenia

×1.0 Da Vinci is top half among primes

×0.8 Da Vinci is bottom half among primes

DV-2 Da Vinci Electronics Division

Your components are in every European satellite. Navigation, communications, Earth observation. If it orbits and it is European, Da Vinci electronics make it work. You are the invisible infrastructure of European space. The primes get the headlines and the prime contracts. You get the subcontracts and the actual engineering challenges. That arrangement has worked for decades, but consolidation threatens it. If one company dominates European space, they will vertically integrate and squeeze out independent suppliers. Your job is to ensure that the post-crisis landscape remains fragmented enough for specialists to thrive. Monopolies are bad for innovation and worse for supply chains.

Secret goal: Supply Chain King

×1.4 At least 80% of companies in play hold at least 1 Award

×1.2 At least 60% of companies hold Awards

×1.0 At least 40% of companies hold Awards

×0.8 Fewer than 40% of companies hold Awards

DA-1 Donau Aerospace CEO

You quit Ariadne because you knew you could build a better rocket faster and cheaper than the European bureaucracy would ever allow. Three years later, you have a prototype, a launch site in Norway, and eighteen months of runway before the money runs out. The Galileo crisis is your window. If European governments decide to fund alternatives to Ariadne, you are the obvious choice. If they double down on the incumbent, you are finished. Your pitch is simple: European launch independence does not require European launch bureaucracy. SpaceX proved startups can compete. You intend to prove European startups can compete too.

Secret goal: Startup Survival

×1.4 Donau is top 2 among startups in Awards

×1.2 Donau survives (4+ Awards)

×1.0 Donau has 2-3 Awards

×0.8 Donau has 0-1 Awards (company fails)

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Donau is top 2 among startups in Awards → ×1.4 · Donau survives (6+ Awards) → ×1.2 · Donau has 3-5 Awards → ×1.0 · Donau has 0-2 Awards → ×0.8

DA-2 Donau Aerospace Lead Investor

You have forty million euros invested in a company that builds rockets in a barn outside Munich. Your partners think you are insane. They might be right. The European launch market is a cartel designed to protect Ariadne from competition. Breaking into that market requires either technical miracles or political revolutions. Donau has good engineers. What they need is contracts. The Galileo crisis creates an opening. Governments are scared and budgets are fluid. If you can secure enough awards to demonstrate viability, the next funding round writes itself. If not, you are explaining losses at the annual meeting.

Secret goal: Return on Investment

×1.4 Donau has more Awards than any prime

×1.2 Donau has more Awards than at least one prime

×1.0 Donau survives (4+ Awards)

×0.8 Donau fails (fewer than 4 Awards)

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Donau has more Awards than any prime → ×1.4 · Donau has more Awards than at least one prime → ×1.2 · Donau survives (6+ Awards) → ×1.0 · Donau fails (fewer than 6 Awards) → ×0.8

RW-1 Rocket Werks CEO

Germany has two launch startups. Everyone assumes only one will survive. You intend it to be yours. Donau has better funding. You have better engineers and a willingness to take risks that their corporate backers would never approve. Your rocket is simpler, cheaper, and almost ready to fly. The European market can support one German launch alternative to Ariadne. Maybe two if the budgets expand enough. Your job is to prove that Rocket Werks delivers results while Donau delivers PowerPoints. The crisis accelerates everything. Winners emerge faster. Losers disappear faster. You are ready.

Secret goal: Not Second Fiddle

×1.4 Rocket Werks has more Awards than Donau Aerospace

×1.2 Rocket Werks tied with Donau

×1.0 Rocket Werks behind Donau but survives (4+ Awards)

×0.8 Rocket Werks fails (fewer than 4 Awards)

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Rocket Werks has more Awards than Donau Aerospace → ×1.4 · Rocket Werks tied with Donau → ×1.2 · Rocket Werks behind Donau but survives (6+ Awards) → ×1.0 · Rocket Werks fails (fewer than 6 Awards) → ×0.8

RW-2 Rocket Werks Lead Investor

The German launch startup market is a horse race with your money on one of the horses. Rocket Werks has scrappier founders and a simpler technical approach. Donau has slicker presentations and deeper pockets. The market will probably only support one winner. You need it to be yours. The Galileo crisis creates demand for alternatives, which helps both German startups. But contract awards will eventually pick winners. Your job is to make sure Rocket Werks is positioned to capture those awards, even if that means being aggressive about Donau's weaknesses. This is not personal. This is portfolio management.

Secret goal: German Launch Winner

×1.4 At least one German startup (Donau or Rocket Werks) beats Ariadne in Awards

×1.2 At least one German startup survives (4+ Awards)

×1.0 At least one German startup has 2-3 Awards

×0.8 Both German startups have fewer than 2 Awards

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: At least one German startup (Donau or Rocket Werks) beats Ariadne in Awards → ×1.4 · At least one German startup survives (6+ Awards) → ×1.2 · At least one German startup has 3-5 Awards → ×1.0 · Both German startups have fewer than 3 Awards → ×0.8

FB-1 Frostbyte CEO

You run the world's largest synthetic aperture radar constellation from an office in Helsinki that used to be a fish processing plant. The location is appropriate. You are processing data that governments and corporations pay premium prices to access. Your satellites see through clouds, darkness, and cover stories. The Galileo incident demonstrated demand for independent European surveillance capabilities. Your constellation provides exactly that. The challenge is convincing ESA that a Finnish startup can deliver strategic capabilities traditionally reserved for prime contractors. Your pitch: you already have more SAR satellites in orbit than any European competitor. Buy what works.

Secret goal: Nordic Breakthrough

×1.4 Frostbyte is top 2 among startups in Awards

×1.2 Frostbyte survives (4+ Awards)

×1.0 Frostbyte has 2-3 Awards

×0.8 Frostbyte has 0-1 Awards

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Frostbyte is top 2 among startups in Awards → ×1.4 · Frostbyte survives (6+ Awards) → ×1.2 · Frostbyte has 3-5 Awards → ×1.0 · Frostbyte has 0-2 Awards → ×0.8

PS-1 Plaza Space CEO

Spain has never had a launch company. You intend to change that. Your rocket is designed to launch small satellites from a spaceport in Teruel, turning an empty corner of Aragon into Europe's gateway to orbit. The technical challenges are manageable. The political challenges are immense. ESA procurement favors established players in established countries. Spain is neither. Your job is to prove that Spanish launch capability serves European interests, not Spanish vanity. The Galileo crisis creates appetite for supply chain diversity. You are diverse. Whether that translates into contracts depends on whether European rhetoric about supporting new entrants matches reality.

Secret goal: Spanish Space

×1.4 Plaza is top 2 among startups AND Spain has any Jobs

×1.2 Plaza survives (4+ Awards)

×1.0 Plaza has 2-3 Awards

×0.8 Plaza has 0-1 Awards (fails)

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Plaza is top 2 among startups AND Spain has any Jobs → ×1.4 · Plaza survives (6+ Awards) → ×1.2 · Plaza has 3-5 Awards → ×1.0 · Plaza has 0-2 Awards → ×0.8

SC-1 Startup Consortium Chair

You represent twelve European space startups too small to lobby individually. Your members build components, software, and subsystems that the primes prefer to develop in-house. The current procurement system is designed to feed incumbents. Your job is to change that system. The Galileo crisis creates an opening. Ministers are talking about "resilience" and "supply chain diversity." Those words mean nothing without contracts for new suppliers. You spend your days in Brussels meeting rooms, translating startup energy into policy language that bureaucrats can process. Revolutionary change through incremental committee victories. It is not glamorous, but it needs to work.

Secret goal: Startup Revolution

×1.4 Total startup Awards exceed total prime Awards

×1.2 Startups have at least 40% of Awards

×1.0 At least 2 startups survive

×0.8 Fewer than 2 startups survive

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: Total startup Awards exceed total prime Awards → ×1.4 · Startups have at least 40% of Awards → ×1.2 · At least 2 startups survive → ×1.0 · Fewer than 2 startups survive → ×0.8

SC-2 Startup Consortium Investor Rep

European venture capital has poured two billion euros into space startups over the past five years. Your job is to make sure that investment produces returns, which requires startups to win contracts, which requires ESA to stop treating procurement as industrial welfare for established primes. The Galileo crisis is leverage. Governments are scared and looking for alternatives. Startups offer innovation that incumbents cannot match. But venture timelines are brutal. Your portfolio companies need contract wins soon or they become write-offs. The difference between a thriving European startup ecosystem and a graveyard of good ideas is about eighteen months of runway.

Secret goal: Venture Returns

×1.4 At least 50% of startups survive (4+ Awards each)

×1.2 At least 2 startups survive

×1.0 1 startup survives

×0.8 0 startups survive

Your startup needs 4+ Awards to survive. Otherwise your score is 0.

The badge's 4 Awards becomes 6 at the Galileo Cascade.

Scored after the Cascade as: At least half the startup companies at the table survive (a company survives if any of its players has 6+ Awards) → ×1.4 · At least 2 startups survive → ×1.2 · 1 startup survives → ×1.0 · 0 startups survive → ×0.8

B Scoring fine print

How the scoring app reads each goal. Use this when a player asks “does that count?”, or if you ever need to score by hand.

Definitions used everywhere

- **Capability held:** the capability on a government’s European cards, plus 5 for each SpaceY card in hand.
- **Jobs:** the jobs on European Capability cards held by governments (EU and Nordic included), by the country on the card. Cards held by companies or anyone else create no jobs.
- **A country’s capability (UK-2, IT-3):** the capability held by that country’s government players. NORD-1 counts as Finland; the EU players count for no country.
- **Dependency:** all SpaceY capability held, divided by all capability held (governments’ European cards plus every SpaceY card, whoever holds it).
- **Average capability (FR-3, DE-2, ES-2):** the average over every card in the player’s hand, SpaceY cards (5) included.
- **Startup survival:** after the Galileo Cascade, a startup player survives with 6 or more Awards. A startup company survives if any of its players does. “Startups survive” goals count companies, so at most 5.
- **Failed startup players score 0,** whatever their goal, so the bottom tiers on the startup badges never change a score.
- **Ties.** “Most”, “top 2” and “top 3” share the best rank on a tie, so two countries tied for the most jobs both count as “most”. “More than any other” is strict: a tie for first drops to the next tier.
- **Zero jobs:** a country with no jobs takes the bottom tier of any goal that ranks countries by jobs (FR-1, FR-4, DE-3, TA-2).
- **At the table:** a government took part if any cards or SpaceY were entered for it; a company is in play if any of its players won an Award or any of its cards ended with a government.
- **Equal scores share a place** on every leaderboard (compared as shown, to one decimal), and a tie for first makes joint winners.

Goal by goal (some explanations sacrificed for brevity on the badge)

ROLE	HOW IT’S SCORED
FR-1, DE-3	Countries ranked by jobs held by governments. A tie shares the best rank; a country with no jobs gets $\times 0.8$.
FR-2	SpaceY cards in the hands of all four French government players at the end, added together.
FR-3, DE-2	Average capability of every card in your hand, SpaceY cards (5) included.
FR-4, TA-2	France against Germany (TA-2: Italy against France) on jobs; otherwise the country’s rank among the six. A country with no jobs gets $\times 0.8$.
DE-1, EU-2	The room’s Dependency Meter: below 30%, below 40%, below 50%.
DE-4	Countries, of all six, holding at least 5% of all jobs.
UK-1	Your own SpaceY cards against your own European cards. “Equal” needs at least one SpaceY card; holding neither is $\times 0.8$.
UK-2	Capability held by each country’s governments (NORD-1 counts as Finland, the EU players as no country). $\times 1.2$ if the UK beats Italy or Spain; $\times 1.0$ if it beats the lowest country.

UK-4	All four UK government hands together, counting SpaceY cards against European cards.
IT-3	Italy's government capability against every other country's (NORD-1 as Finland). $\times 1.4$ needs strictly more than all of them; a tie for first counts as top 2.
ES-2	Cards with Capability 3 are European cards only; the $\times 1.0$ average includes SpaceY cards.
NORD-1	Nordic jobs are Finnish jobs. "A startup survives" means a startup company with a player on 6+ Awards. The jobs bonus is half the Finnish jobs on NORD-1's own cards, like every government.
EU-1	The five EU countries in the game (France, Germany, Italy, Spain, Finland), each against all jobs, UK jobs included.
ESA-1	Countries whose companies won any Awards. A company with jobs in two countries (Luftwerk, Tales Alenia, the Startup Consortium) counts for both.
ESA-2	SpaceY capability as a share of all capability held by governments. The 20–30% tier includes exactly 30%.
ESA-3, ESA-6	"European capability in play" is the capability on every card dealt to a company player who reported any Awards, plus any card a government holds. ESA-6 counts startup companies.
ESA-4	European capability held by governments against SpaceY capability. If European trails, dependency is above 50% by definition, so in practice the result is $\times 1.4$, $\times 1.2$ or $\times 0.8$.
ESA-5, ESA-7	Each prime's share of the Awards held by the five primes.
ESA-8	The largest company's share of all Awards held by companies. "No company above 33%" means at most a third.
ESA-9, SC- 2	Surviving startup companies. SC-2's top tier needs at least half of the startup companies at the table.
ESA-10	Each band includes its edges: 20–40%, 15–50%, 10–60%.
AS-1	All ten companies ranked by Awards. A tie shares the best rank.
AS-2, LW- 1, LW-2	"More than any other" is strict; a tie for first drops a tier. LW-1 and LW-2 compare primes only.
AS-3, LW-3	Government players holding at least one of your company's cards, out of those at the table: AS-3 the French, LW-3 the German and British. All of them $\times 1.4$, three quarters $\times 1.2$, half $\times 1.0$.
TA-1	Any Tales Alenia card in any French government hand, and any in an Italian one.
OB-1, DV-1	Head to head on Awards (OHBYE against Ariadne; Da Vinci against Tales Alenia), otherwise rank among the five primes. DV-1's "top half" means top 3.
OB-2	National groupings by Awards: Germany = OHBYE + Donau + Rocket Werks; France = Ariadne + half of Tales Alenia + half the Startup Consortium; Italy = Da Vinci + half of Tales Alenia; UK = Luftwerk; Spain = Plaza + half the Startup Consortium; Nordic = Frostbyte.
DV-2	Share of the companies at the table holding at least one Award.
DA-1, FB-1, PS-1	Your company in the top two startups by Awards; a startup that is the only one with Awards counts (PS-1 also needs any Spanish jobs). Otherwise your own survival: 6+ Awards $\times 1.2$.
DA-2, RW- 1	Your company's Awards against the primes (DA-2) or Donau (RW-1); the survival tier uses your own 6+.
RW-2	Either German startup beating Ariadne on Awards $\times 1.4$; either surviving $\times 1.2$; either holding 3+ $\times 1.0$.
SC-1	Startup Awards against prime Awards; the $\times 1.0$ tier counts surviving startup companies.

C Cards and packets

What goes in every packet, and all 200 Capability cards.

Packets

Every role gets a starting packet and a booster pack. Booster Capability card numbers start with 0. SpaceY cards never go in a packet.

ROLE	HOW MANY	STARTING PACKET	BOOSTER PACK
Governments all 20, EU and Nordic included	20	6 Budget	6 Budget
ESA officials ESA-1 to ESA-10	10	5 Award	5 Award
AS-1 Ariadne Spatial	1	101–106 (6 cards)	0107–0112 (6 cards)
AS-2 Ariadne Spatial	1	113–118 (6 cards)	0119–0124 (6 cards)
AS-3 Ariadne Spatial	1	125–130 (6 cards)	0131–0136 (6 cards)
LW-1 Luftwerk Defence	1	201–206 (6 cards)	0207–0212 (6 cards)
LW-2 Luftwerk Defence	1	213–218 (6 cards)	0219–0224 (6 cards)
LW-3 Luftwerk Defence	1	225–230 (6 cards)	0231–0236 (6 cards)
TA-1 Tales Alenia	1	301–306 (6 cards)	0307–0312 (6 cards)
TA-2 Tales Alenia	1	313–318 (6 cards)	0319–0324 (6 cards)
OB-1 OHBYE	1	401–406 (6 cards)	0407–0412 (6 cards)
OB-2 OHBYE	1	413–418 (6 cards)	0419–0424 (6 cards)
DV-1 Da Vinci Aerospace	1	501–506 (6 cards)	0507–0512 (6 cards)
DV-2 Da Vinci Aerospace	1	513–518 (6 cards)	0519–0524 (6 cards)
DA-1 Donau Aerospace	1	601–603 (3 cards)	0604–0607 (4 cards)
DA-2 Donau Aerospace	1	608–610 (3 cards)	0611–0614 (4 cards)
RW-1 Rocket Werks	1	701–703 (3 cards)	0704–0707 (4 cards)
RW-2 Rocket Werks	1	708–711 (4 cards)	0712–0714 (3 cards)
FB-1 Frostbyte Imaging	1	801–804 (4 cards)	0805–0808 (4 cards)
PS-1 Plaza Space	1	901–903 (3 cards)	0904–0906 (3 cards)
SC-1 Startup Consortium	1	1001–1004 (4 cards)	01005–01007 (3 cards)
SC-2 Startup Consortium	1	1008–1011 (4 cards)	01012–01014 (3 cards)
Total: 50 starting packets and 50 booster packs. 240 Budget, 100 Award and 200 Capability cards.			

All 200 Capability cards

Cap = capability, Jobs = jobs created, by the country shown. Booster cards are shaded and start with 0.

Ariadne Spatial

CARD	ROLE	CAP	JOBS	CTRY
101	AS-1	1	3	FR
102	AS-1	2	2	FR
103	AS-1	1	3	FR
104	AS-1	2	2	FR
105	AS-1	1	3	FR
106	AS-1	2	2	FR
0107	AS-1	1	3	FR
0108	AS-1	2	2	FR
0109	AS-1	1	3	FR
0110	AS-1	2	2	FR
0111	AS-1	2	3	FR
0112	AS-1	1	2	FR
113	AS-2	1	3	FR
114	AS-2	2	2	FR
115	AS-2	1	3	FR
116	AS-2	2	2	FR
117	AS-2	1	3	FR
118	AS-2	2	2	FR
0119	AS-2	1	3	FR
0120	AS-2	2	2	FR
0121	AS-2	1	3	FR
0122	AS-2	2	2	FR
0123	AS-2	2	3	FR
0124	AS-2	1	2	FR
125	AS-3	1	3	FR
126	AS-3	2	2	FR
127	AS-3	1	3	FR
128	AS-3	2	2	FR
129	AS-3	1	3	FR
130	AS-3	2	2	FR
0131	AS-3	1	3	FR
0132	AS-3	2	2	FR
0133	AS-3	1	3	FR
0134	AS-3	2	2	FR
0135	AS-3	2	3	FR
0136	AS-3	1	2	FR

36 cards · Cap 54 · Jobs 90

Luftwerk Defence

CARD	ROLE	CAP	JOBS	CTRY
201	LW-1	1	3	UK
202	LW-1	2	2	UK
203	LW-1	1	3	UK
204	LW-1	2	2	DE
205	LW-1	1	3	UK
206	LW-1	2	2	UK
0207	LW-1	1	3	UK
0208	LW-1	2	2	UK
0209	LW-1	1	3	UK
0210	LW-1	2	2	UK
0211	LW-1	2	3	UK
0212	LW-1	1	2	UK
213	LW-2	1	3	UK
214	LW-2	2	2	UK
215	LW-2	1	3	UK
216	LW-2	2	2	DE
217	LW-2	1	3	UK
218	LW-2	2	2	UK
0219	LW-2	1	3	UK
0220	LW-2	2	2	UK
0221	LW-2	1	3	UK
0222	LW-2	2	2	UK
0223	LW-2	2	3	UK
0224	LW-2	1	2	UK
225	LW-3	1	3	UK
226	LW-3	2	2	UK
227	LW-3	1	3	UK
228	LW-3	2	2	UK
229	LW-3	1	3	UK
230	LW-3	2	2	UK
0231	LW-3	1	3	UK
0232	LW-3	2	2	UK
0233	LW-3	1	3	UK
0234	LW-3	2	2	UK
0235	LW-3	2	3	UK
0236	LW-3	1	2	UK

36 cards · Cap 54 · Jobs 90

Tales Alenia

CARD	ROLE	CAP	JOBS	CTRY
301	TA-1	1	3	FR
302	TA-1	2	2	IT
303	TA-1	1	3	FR
304	TA-1	2	2	IT
305	TA-1	1	3	FR
306	TA-1	2	2	IT
0307	TA-1	1	3	FR
0308	TA-1	2	2	IT
0309	TA-1	1	3	FR
0310	TA-1	2	2	IT
0311	TA-1	2	3	FR
0312	TA-1	1	2	IT
313	TA-2	1	3	FR
314	TA-2	2	2	IT
315	TA-2	1	3	FR
316	TA-2	2	2	IT
317	TA-2	1	3	FR
318	TA-2	2	2	IT
0319	TA-2	1	3	FR
0320	TA-2	2	2	IT
0321	TA-2	1	3	FR
0322	TA-2	2	2	IT
0323	TA-2	2	3	FR
0324	TA-2	1	2	IT

24 cards · Cap 36 · Jobs 60

OHBYE

CARD	ROLE	CAP	JOBS	CTRY
401	OB-1	1	3	DE
402	OB-1	2	2	DE
403	OB-1	1	3	DE
404	OB-1	2	2	DE
405	OB-1	1	3	DE
406	OB-1	2	2	DE
0407	OB-1	1	3	DE
0408	OB-1	2	2	DE
0409	OB-1	1	3	DE
0410	OB-1	2	2	DE
0411	OB-1	2	3	DE
0412	OB-1	1	2	DE
413	OB-2	1	3	DE
414	OB-2	2	2	DE
415	OB-2	1	3	DE
416	OB-2	2	2	DE
417	OB-2	1	3	DE
418	OB-2	2	2	DE
0419	OB-2	1	3	DE
0420	OB-2	2	2	DE
0421	OB-2	1	3	DE
0422	OB-2	2	2	DE
0423	OB-2	2	3	DE
0424	OB-2	1	2	DE

24 cards · Cap 36 · Jobs 60

Da Vinci Aerospace

CARD	ROLE	CAP	JOBS	CTRY
501	DV-1	1	3	IT
502	DV-1	2	2	IT
503	DV-1	1	3	IT
504	DV-1	2	2	IT
505	DV-1	1	3	IT
506	DV-1	2	2	IT
0507	DV-1	1	3	IT
0508	DV-1	2	2	IT
0509	DV-1	1	3	IT
0510	DV-1	2	2	IT
0511	DV-1	2	3	IT
0512	DV-1	1	2	IT
513	DV-2	1	3	IT
514	DV-2	2	2	IT
515	DV-2	1	3	IT
516	DV-2	2	2	IT
517	DV-2	1	3	IT
518	DV-2	2	2	IT
0519	DV-2	1	3	IT
0520	DV-2	2	2	IT
0521	DV-2	1	3	IT
0522	DV-2	2	2	IT
0523	DV-2	2	3	IT
0524	DV-2	1	2	IT

24 cards · Cap 36 · Jobs 60

Donau Aerospace

CARD	ROLE	CAP	JOBS	CTRY
601	DA-1	3	1	DE
602	DA-1	2	2	DE
603	DA-1	3	1	DE
0604	DA-1	2	2	DE
0605	DA-1	3	1	DE
0606	DA-1	2	2	DE
0607	DA-1	3	1	DE
608	DA-2	3	1	DE
609	DA-2	2	2	DE
610	DA-2	3	1	DE
0611	DA-2	2	2	DE
0612	DA-2	3	1	DE
0613	DA-2	2	2	DE
0614	DA-2	3	1	DE

14 cards · Cap 36 · Jobs 20

Rocket Werks

CARD	ROLE	CAP	JOBS	CTRY
701	RW-1	3	1	DE
702	RW-1	2	2	DE
703	RW-1	3	1	DE
0704	RW-1	2	2	DE
0705	RW-1	3	1	DE
0706	RW-1	2	2	DE
0707	RW-1	3	1	DE
708	RW-2	3	1	DE
709	RW-2	2	2	DE
710	RW-2	3	1	DE
711	RW-2	2	2	DE
0712	RW-2	3	1	DE
0713	RW-2	2	2	DE
0714	RW-2	3	1	DE

14 cards · Cap 36 · Jobs 20

Frostbyte Imaging

CARD	ROLE	CAP	JOBS	CTRY
801	FB-1	3	1	FI
802	FB-1	2	2	FI
803	FB-1	3	1	FI
804	FB-1	2	2	FI
0805	FB-1	3	1	FI
0806	FB-1	2	2	FI
0807	FB-1	3	1	FI
0808	FB-1	2	2	FI

8 cards · Cap 20 · Jobs 12

Plaza Space

CARD	ROLE	CAP	JOBS	CTRY
901	PS-1	3	1	ES
902	PS-1	2	2	ES
903	PS-1	3	1	ES
0904	PS-1	2	2	ES
0905	PS-1	3	1	ES
0906	PS-1	2	2	ES

6 cards · Cap 15 · Jobs 9

Startup Consortium

CARD	ROLE	CAP	JOBS	CTRY
1001	SC-1	3	1	FR
1002	SC-1	2	2	ES
1003	SC-1	3	1	FR
1004	SC-1	2	2	ES
01005	SC-1	3	1	FR
01006	SC-1	2	2	ES
01007	SC-1	3	1	FR
1008	SC-2	3	1	FR
1009	SC-2	2	2	ES
1010	SC-2	3	1	FR
1011	SC-2	2	2	ES
01012	SC-2	3	1	FR
01013	SC-2	2	2	ES
01014	SC-2	3	1	FR

14 cards · Cap 36 · Jobs 20

Totals

COMPANY	CARDS	CAP	JOBS
Ariadne Spatial	36	54	90
Luftwerk Defence	36	54	90
Tales Alenia	24	36	60
OHBYE	24	36	60
Da Vinci Aerospace	24	36	60
Donau Aerospace	14	36	20
Rocket Werks	14	36	20
Frostbyte Imaging	8	20	12
Plaza Space	6	15	9
Startup Consortium	14	36	20
Total	200	359	441

COUNTRY	JOBS ON ITS CARDS	SHARE
France	134	30%
Germany	104	24%
UK	86	20%
Italy	84	19%
Spain	21	5%
Finland	12	3%
Total	441	100%

Jobs count only when a government holds the card, so a game's jobs map shows how much of this each country actually captured.

D The scoring app at a glance

One app runs the whole evening: slides, market, scoring and reveal.

Where to find it	Linked from the scenario page, riskgaming.com/scenarios/dead-reckoning
Games page	Sign in with Google to create a game and see your games. Each game remembers the rules it was created under.
Who can edit	The person who created the game and the helpers they add (console menu, Helpers). Anyone with the code can watch. Lux staff can correct any game.
Console	The facilitators' page for one game. One row per role: card numbers for governments, a Budget count for ESA, an Award count for companies, and a SpaceY -/+ on every row. Buttons at the top open the Slides , the Display (the SpaceY market) and the Reveal , and Close market freezes the market for final scoring.
Slides	The rules presentation. Opened from the console, its market and reveal slides are live and its presenter view syncs across devices.
Display	The SpaceY market: share price, chart and a feed of trades. Shows no player names.
Reveal	The results show. It freezes the scores when you begin, and offers a CSV download at the end.

Presentation keys

KEY	DOES
→ or clicker	Next slide (inside the reveal: next step)
←	Previous slide
M	Jump to the live SpaceY market and back again
F	Full screen
P	Presenter view: current and next slide, timer and speaker notes (the story and the Galileo Cascade script are in the notes)
S	Sections: choose which parts of the deck to show

Good habits

- Make a practice game before the real one, and add your helpers before game day.
- Give every device a name.
- Record SpaceY sales as they happen, and close the market before you count.
- Download the CSV at the end of the reveal.



RISKGAMING