

WORLD DOCUMENTATION

Synthetic Exercise World

Self-contained fictional world dataset for cyber exercises and standards documents.

The MISP Project & Contributors

Updated 2026-11-28

Synthetic Exercise World on GitHub

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Project overview

Browse the world extensions and their maps · Run an exercise in MISP · Download the documentation PDF · Acknowledgements

Why the Synthetic Exercise World Format Matters

The Synthetic Exercise World Format provides a neutral and reusable reference environment for cyber threat intelligence exercises, drills, training scenarios, and documentation. By using fictional countries, organizations, sectors, infrastructures, and threat actors, participants can discuss realistic CTI concepts without implicitly referring to real geopolitical situations, real victims, or real adversaries. This helps trainers, analysts, vendors, public institutions, and standardization bodies focus on the structure, quality, and interoperability of the information rather than on politically sensitive interpretations.

Neutrality is especially important when creating reference material for CTI formats, taxonomies, sharing models, or operational procedures. Real-world examples can unintentionally introduce bias, diplomatic sensitivity, legal concerns, or disagreement between participating countries and organizations. A synthetic world avoids these issues by offering realistic but non-attributable entities that can be safely used in examples, schemas, test cases, playbooks, and exercises. This makes the reference document easier to adopt across different jurisdictions and communities.

A shared synthetic environment also improves consistency. Instead of each exercise or standard document inventing its own partial examples, the same fictional countries, companies, sectors, and threat actors can be reused across multiple tools and formats. This makes it easier to compare implementations, validate parsers, test data models, and demonstrate interoperability between CTI platforms. The format can become a common neutral vocabulary for examples, much like test datasets are used in software engineering.

The Synthetic Exercise World Format also supports realistic scenario design without exposing sensitive national, sectoral, or organizational information. Exercise planners can model cross-border incidents, supply-chain compromises, sector-specific threats, vulnerability disclosure workflows, and intelligence-sharing procedures while avoiding references to real critical infrastructure or real governmental relationships. This lowers the barrier for participation and allows organizations with different confidentiality requirements to collaborate in the same scenario.

Including the Synthetic Exercise World Format in reference documentation helps ensure that CTI standards and tools can be widely deployed. It provides a safe, politically neutral, and technically meaningful foundation for examples, demonstrations, conformance testing, and training. By separating the technical purpose of CTI sharing from real-world sensitivities, the format encourages broader adoption, clearer communication, and more inclusive participation across countries, sectors, and communities.

Synthetic Exercise World Format — Data Model

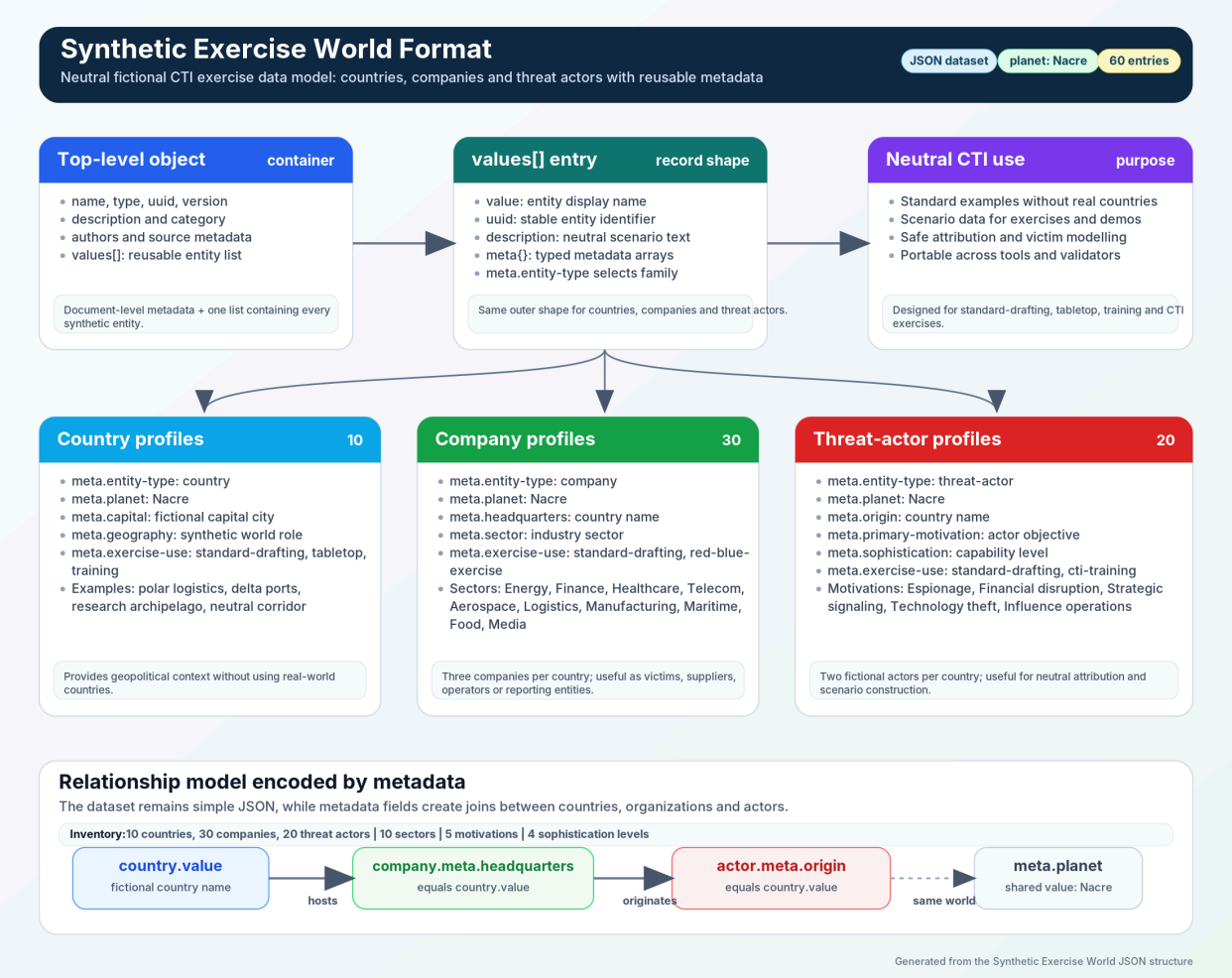


Figure 0.1: Synthetic Exercise World Format diagram

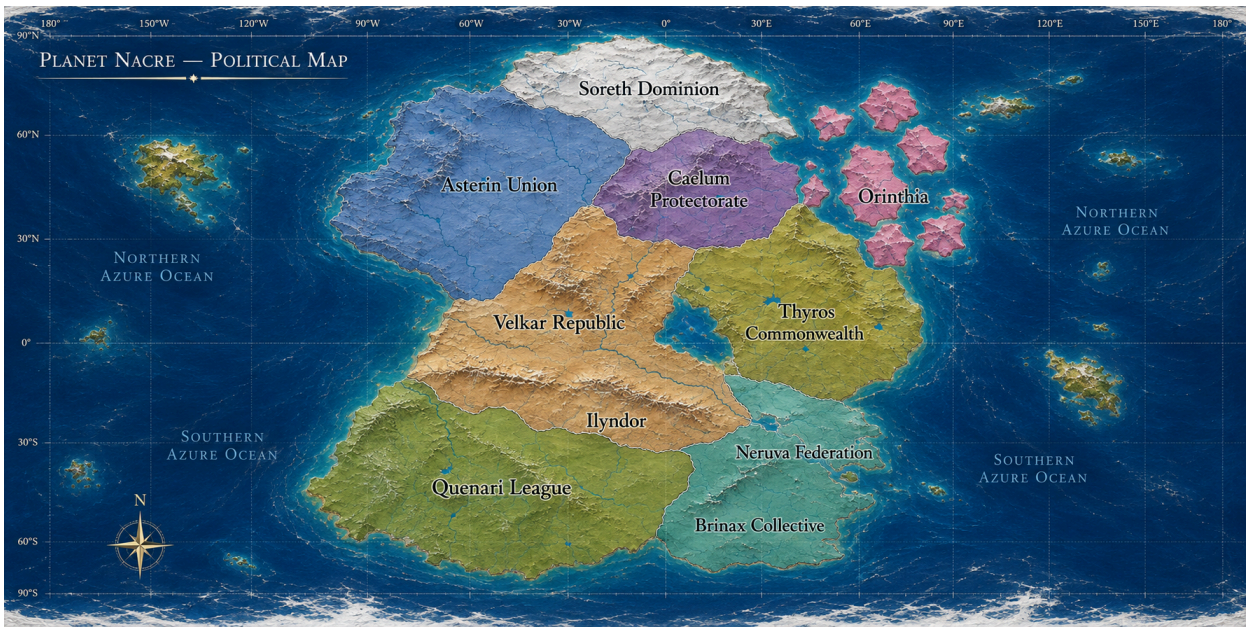


Figure 0.2: Synthetic Exercise World map - official map

What the JSON provides

The dataset is a single JSON object with document-level fields such as `name`, `type`, `uuid`, `version`, `description`, and a reusable `values[]` list. Each item in `values[]` has a common record shape: `value`, `uuid`, `description`, and `meta`.

Entity families

Entity family	Count	Main metadata fields	How it is used
Country	10	`entity-type`, `planet`, `capital`, `geography`, `exercise-use`	Provides fictional geopolitical context for neutral exercises and examples.
Company	30	`entity-type`, `planet`, `headquarters`, `sector`, `exercise-use`	Provides fictional organizations, victims, suppliers, operators, or reporting entities.
Threat actor	20	`entity-type`, `planet`, `origin`, `primary-motivation`, `sophistication`, `exercise-use`	Provides non-real actors for neutral attribution and CTI training scenarios.

Metadata relationships

```
company.meta.headquarters == country.value
threat-actor.meta.origin  == country.value
all meta.planet values     == "Nacre"
```

This means a tool can group companies and threat actors by fictional country without relying on real-world geopolitical references.

Country availability summary

Country	Capital	Geography	Sector represented	Companies	Threat actors
Asterin Union	Asterin Prime	Northern supercontinent	Energy	3	2
Velkar Republic	Velkar Prime	Inland industrial basin	Finance	3	2
Orinthia	Orinthia Prime	Archipelago of research hubs	Healthcare	3	2
Caelum Protectorate	Caelum Prime	High-altitude plateau state	Telecommunications	3	2
Neruva Federation	Neruva Prime	Delta megacities and ports	Aerospace	3	2
Thyros Commonwealth	Thyros Prime	Resource-rich steppe	Logistics	3	2
Ilyndor	Ilyndor Prime	Neutral trade corridor	Manufacturing	3	2
Brinax Collective	Brinax Prime	Energy-grid cooperative state	Maritime	3	2
Soreth Dominion	Soreth Prime	Polar logistics nation	Food	3	2
Quenari League	Quenari Prime	Equatorial agri-tech alliance	Media	3	2

Synthetic Exercise World Format JSON

The JSON format follows the standard MISP galaxy structure, making it directly compatible with tools and platforms that already support MISP galaxy definitions. This allows the Synthetic Exercise World data to be loaded, shared, and reused without requiring a custom parser or dedicated data model. As a result,

countries, companies, and threat actors from the synthetic dataset can be integrated into existing MISP-compatible workflows for exercises, documentation, testing, and training.

- Self-contained fictional world dataset for cyber exercises and standards documents in MISP Galaxy JSON format.

Geography of the Synthetic Exercise World

The shared Nacre coordinate grid registers country boundaries, capitals, and extension sites, routes, and coverage. Explore the interactive atlas or download the GeoJSON through the geographic atlas guide.

Synthetic Exercise World Map — Planet Nacre

This field guide accompanies the revised fictional atlas map. The map is designed for neutral cyber-exercise planning and keeps the original synthetic country, company, and threat-actor relationships while making the visual layout easier to read.

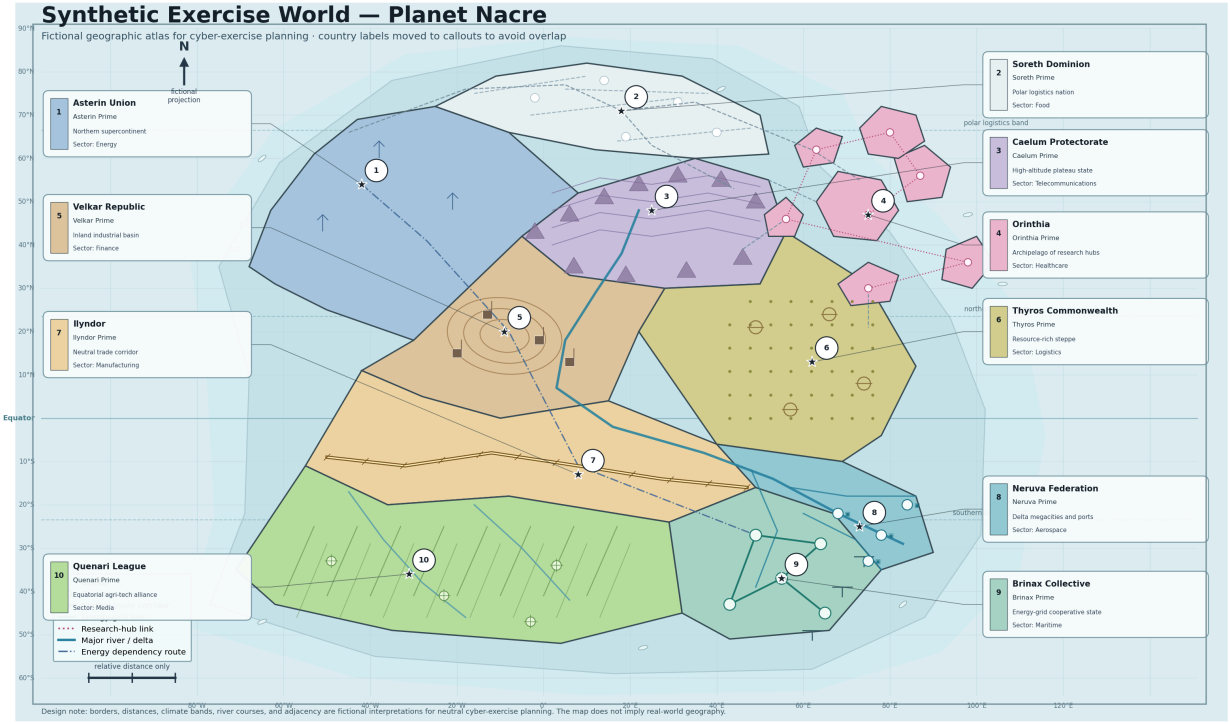


Figure 0.3: Synthetic Exercise World - Planet Nacre

SVG

Match a flag to its country using the flag atlas and visual index.

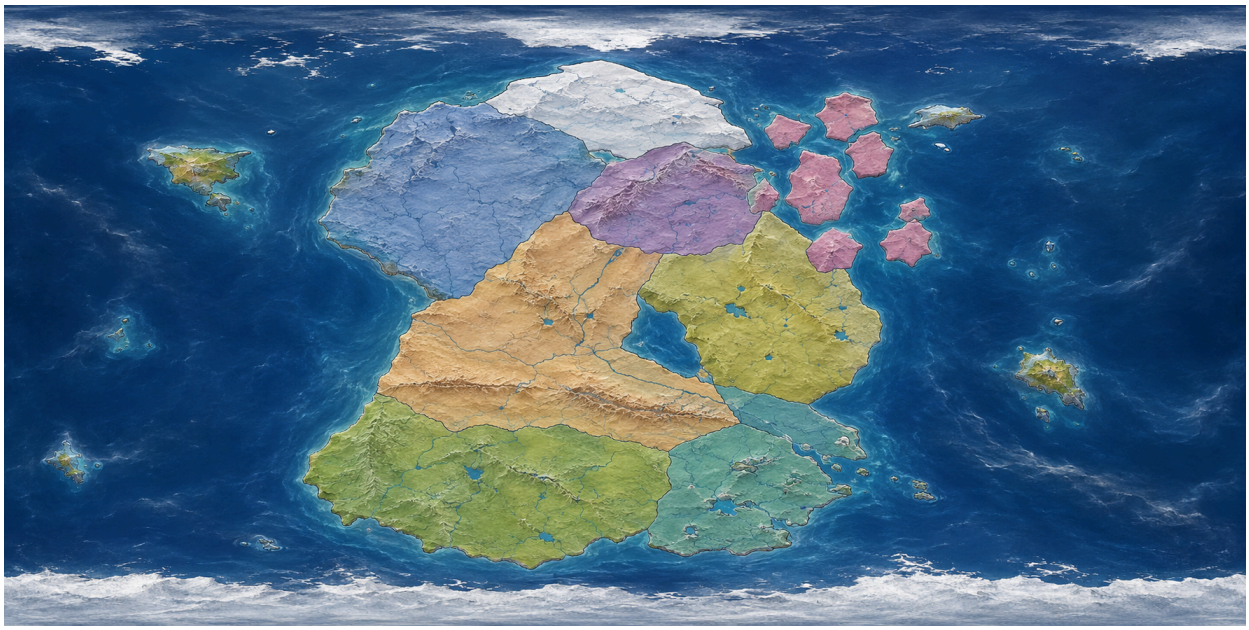


Figure 0.4: Synthetic Exercise World - MAP without labels

Country index

#	Country	Capital	Geography	Sector
1	Asterin Union	Asterin Prime	Northern supercontinent	Energy
2	Soreth Dominion	Soreth Prime	Polar logistics nation	Food
3	Caelum Protectorate	Caelum Prime	High-altitude plateau state	Telecommunications
4	Orinthia	Orinthia Prime	Archipelago of research hubs	Healthcare
5	Velkar Republic	Velkar Prime	Inland industrial basin	Finance
6	Thyros Commonwealth	Thyros Prime	Resource-rich steppe	Logistics
7	Ilyndor	Ilyndor Prime	Neutral trade corridor	Manufacturing
8	Neruva Federation	Neruva Prime	Delta megacities and ports	Aerospace
9	Brinax Collective	Brinax Prime	Energy-grid cooperative state	Maritime
10	Quenari League	Quenari Prime	Equatorial agri-tech alliance	Media

Country notes and entities

Asterin Union

- **Capital:** Asterin Prime
- **Geography:** Northern supercontinent
- **Primary sector represented by companies:** Energy
- **Companies:** NovaCore Systems, NovaMatrix Systems, NovaNimbus Systems
- **Synthetic threat actors:** TA-700 Obsidian Jackal, TA-710 Obsidian Jackal
- **Map role:** North-western continental anchor. Energy infrastructure is represented by continental routes toward Brinax and the inland basin.

Soreth Dominion

- **Capital:** Soreth Prime
- **Geography:** Polar logistics nation
- **Primary sector represented by companies:** Food
- **Companies:** DeltaHarbor Networks, DeltaNimbus Networks, DeltaBeacon Networks
- **Synthetic threat actors:** TA-708 Sable Hydra, TA-718 Sable Hydra

- **Map role:** Polar and sub-polar logistics state. Dashed northern sea routes connect it to Asterin, Caelum, and Orinthia.

Caelum Protectorate

- **Capital:** Caelum Prime
- **Geography:** High-altitude plateau state
- **Primary sector represented by companies:** Telecommunications
- **Companies:** BlueBridge Networks, BluePulse Networks, BlueForge Networks
- **Synthetic threat actors:** TA-703 Violet Hydra, TA-713 Violet Hydra
- **Map role:** High central plateau and telecommunications relay state. Mountain symbols and river sources show why it matters for routing and connectivity.

Orinthia

- **Capital:** Orinthia Prime
- **Geography:** Archipelago of research hubs
- **Primary sector represented by companies:** Healthcare
- **Companies:** IronCore Dynamics, IronPulse Dynamics, IronForge Dynamics
- **Synthetic threat actors:** TA-702 Crimson Rook, TA-712 Crimson Rook
- **Map role:** North-eastern archipelago of research hubs. Islands are linked by research routes and undersea cables to the continent.

Velkar Republic

- **Capital:** Velkar Prime
- **Geography:** Inland industrial basin
- **Primary sector represented by companies:** Finance
- **Companies:** HelixCore Group, HelixMatrix Group, HelixForge Group
- **Synthetic threat actors:** TA-701 Silver Mantis, TA-711 Silver Mantis
- **Map role:** Inland industrial/finance basin between Asterin, Caelum, Thyros, and the Ilyndor corridor.

Thyros Commonwealth

- **Capital:** Thyros Prime
- **Geography:** Resource-rich steppe
- **Primary sector represented by companies:** Logistics
- **Companies:** VertexBridge Systems, VertexFoundry Systems, VertexLattice Systems
- **Synthetic threat actors:** TA-705 Cobalt Jackal, TA-715 Cobalt Jackal
- **Map role:** Eastern resource-rich steppe. Resource marks and open space support logistics and supply-chain narratives.

Ilyndor

- **Capital:** Ilyndor Prime
- **Geography:** Neutral trade corridor
- **Primary sector represented by companies:** Manufacturing
- **Companies:** CinderHarbor Group, CinderFoundry Group, CinderLattice Group
- **Synthetic threat actors:** TA-706 Onyx Mantis, TA-716 Onyx Mantis
- **Map role:** Narrow neutral trade corridor joining west, basin, steppe, south, ports, and grid infrastructure.

Neruva Federation

- **Capital:** Neruva Prime
- **Geography:** Delta megacities and ports
- **Primary sector represented by companies:** Aerospace
- **Companies:** SkyBridge Labs, SkyPulse Labs, SkyLattice Labs
- **Synthetic threat actors:** TA-704 Amber Drift, TA-714 Amber Drift
- **Map role:** South-eastern river delta with megacity and port concentration, suitable for aerospace, port, and crisis-communication scenarios.

Brinax Collective

- **Capital:** Brinax Prime
- **Geography:** Energy-grid cooperative state
- **Primary sector represented by companies:** Maritime
- **Companies:** AuroraHarbor Dynamics, AuroraFoundry Dynamics, AuroraBeacon Dynamics
- **Synthetic threat actors:** TA-707 Ivory Rook, TA-717 Ivory Rook

- **Map role:** South-eastern coastal/grid cooperative linking maritime infrastructure with the southern power grid.

Quenari League

- **Capital:** Quenari Prime
- **Geography:** Equatorial agri-tech alliance
- **Primary sector represented by companies:** Media
- **Companies:** QuantumMatrix Labs, QuantumNimbus Labs, QuantumBeacon Labs
- **Synthetic threat actors:** TA-709 Copper Drift, TA-719 Copper Drift
- **Map role:** Equatorial and sub-equatorial agri-tech belt, shown with field grids and floodplain routes.

Adjacency and planning interpretation

Country	Neighboring or nearby exercise regions	Planning rationale
Asterin Union	Soreth Dominion, Caelum Protectorate, Velkar Republic, Ilyndor	Energy, northern continental access, basin dependencies.
Soreth Dominion	Asterin Union, Caelum Protectorate, Orinthia sea routes	Polar logistics, cold-chain routing, maritime/satellite exercise narratives.
Caelum Protectorate	Asterin Union, Soreth Dominion, Velkar Republic, Thyros Commonwealth, Orinthia sea links	High-altitude telecom relays, river sources, route chokepoints.
Orinthia	Caelum Protectorate, Thyros Commonwealth, Soreth sea routes	Research hubs, healthcare dependencies, undersea cable resilience.
Velkar Republic	Asterin Union, Caelum Protectorate, Thyros Commonwealth, Ilyndor	Finance/industrial dependencies within a basin bordered by strategic neighbors.
Thyros Commonwealth	Caelum Protectorate, Velkar Republic, Ilyndor, Neruva Federation, Orinthia sea lanes	Resource logistics and overland transit between plateau, basin, and delta.
Ilyndor	Asterin Union, Velkar Republic, Thyros Commonwealth, Quenari League, Brinax Collective, Neruva Federation	Neutral corridor for road, rail, manufacturing, diplomatic escalation, and incident notification.
Neruva Federation	Thyros Commonwealth, Ilyndor, Brinax Collective, Quenari League, southern sea lanes	Delta ports and dense megacities create concentrated impact and recovery planning.
Brinax Collective	Ilyndor, Quenari League, Neruva Federation	Energy-grid and maritime interdependency scenarios.
Quenari League	Ilyndor, Brinax Collective, Neruva Federation	Agri-tech, media, floodplain logistics, and public communication narratives.

Scenario ideas

- **Cross-border infrastructure cascade:** Start with Asterin energy disruption, route it through Ilyndor and Brinax, then create follow-on impact in Neruva ports and Quenari agri-tech/media narratives.
- **Telecom/routing exercise:** Use Caelum as the high-altitude relay state, with Orinthia undersea links and Velkar/Thyros terrestrial routing as alternate paths.
- **Supply-chain drill:** Chain Soreth polar logistics, Thyros steppe logistics, Ilyndor corridor manufacturing, and Neruva delta ports.
- **Public communication and influence:** Pair Neruva delta megacity pressure with Quenari media companies and Orinthia healthcare/research stakeholders.
- **Neutral corridor stress test:** Treat Ilyndor as a diplomatic and technical choke point for data-sharing, emergency peering, cross-border incident notification, and temporary traffic rerouting.

Veyra — the world beneath Nacre

Veyra is an inhabited network of caverns beneath Nacre, with crossings in Ilyndor, Brinax Collective, and on Kestrel Island in Orinthia. Its settlements share a council that allocates water and maintains the light galleries. Lantern Basin is the largest settlement and the main market for goods arriving from the surface.

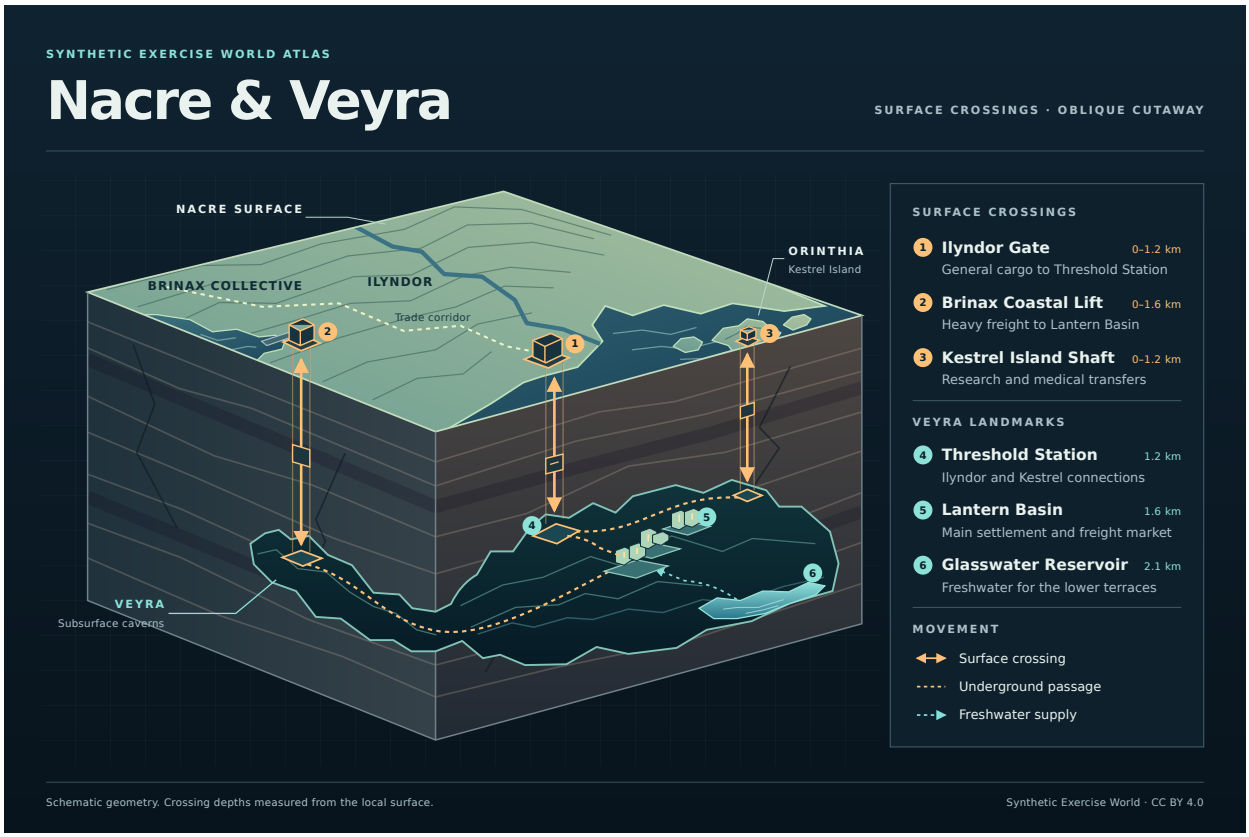


Figure 0.5: Oblique cutaway of Nacre and Veyra showing the Ilyndor, Brinax, and Kestrel Island crossings and their routes to Threshold Station and Lantern Basin

Each crossing's depth is measured from its local surface. Horizontal distances and cavern sizes are schematic.

Landmark	Depth	Role
Ilyndor Gate	Surface to 1.2 km	Jointly operated transfer lift and Veyra's main route for general cargo.
Brinax Coastal Lift	Surface to 1.6 km	Heavy-freight lift at a Brinax Collective port. A freight gallery leads to Lantern Basin.
Kestrel Island Shaft	Surface to 1.2 km	Restricted crossing for research teams and medical transfers, with a passage to Threshold Station. Kestrel Island is the only Orinthian island with access to Veyra.
Threshold Station	1.2 km	Ilyndor landing, cargo inspection point, and shared communications relay at the end of the Kestrel research passage.
Lantern Basin	1.6 km	Main Veyran settlement and freight market. A haulway connects it to Threshold Station, and the Brinax freight gallery serves its receiving terraces.
Glasswater Reservoir	2.1 km	Freshwater reserve feeding Lantern Basin's lower terraces.

Ilyndor sends food, medicines, and replacement equipment down the gate lift. Veyra sends optical glass and specialist repair crews up to the corridor. The Ilyndor and Veyran councils must both approve a closure of Ilyndor Gate, and Threshold Station relays manifests and emergency messages in either direction. Brinax moves bulk supplies and grid equipment, while Kestrel handles research and medical transfers.

An Ilyndor Gate outage gives exercise participants a choice about what to reroute through Brinax, which medical transfers qualify for Kestrel, and which supplies to allocate from Veyra's reserves. When the gate reopens, participants can reconcile the manifests recorded at each crossing.

Integrating the dataset

Projects consuming the Synthetic Exercise World should:

- pin the exact `MISP/misp-galaxy` revision of both `clusters/exercise-world.json` and `galaxies/exercise-world.json`, rather than relying only on the numeric dataset version;
- use entity UUIDs as stable references and treat `value` as display text;
- load the galaxy before importing events carrying `misp-galaxy:exercise-world` tags;
- validate the generic MISP Galaxy JSON schemas plus the documented country/company/actor relationships; and
- preserve CC-BY-4.0 attribution and record whether local changes were made.

Veyra has its own MISP galaxy definition and cluster collection. Import both alongside the surface dataset and use the `exercise-world-veyra` galaxy type for Veyran entities. The three crossing clusters link by UUID to their surface countries and their destinations within Veyra. The Kestrel Island Shaft cluster uses `meta.surface-site` to identify the specific island within Orinthia. The surface references were verified against MISP Galaxy revision `779b780`.

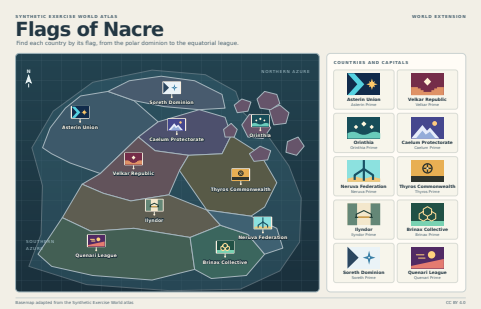
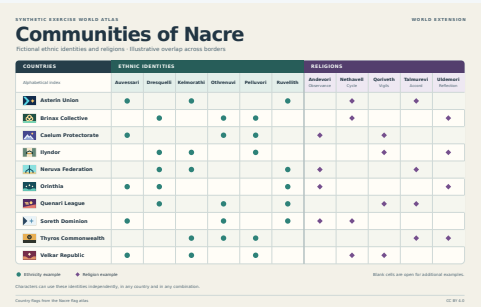
Run an exercise in MISP

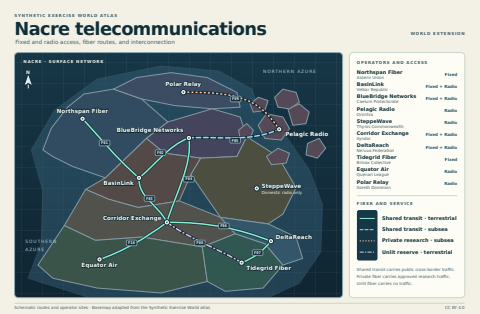
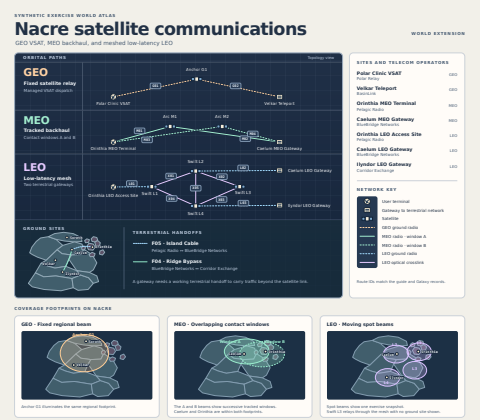
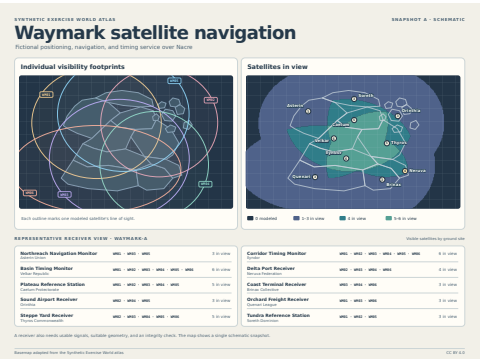
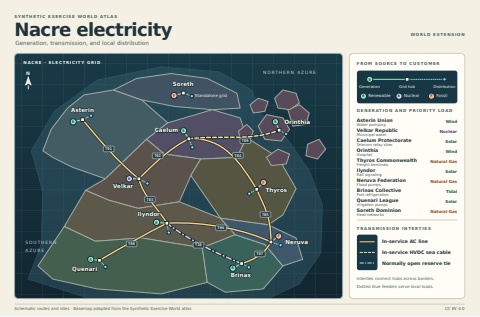
Use the NACRE-01 walkthrough to load the Galaxies, document a synthetic port incident with an event and analyst assessment, and test sharing between separate country teams. MISP exercise guide

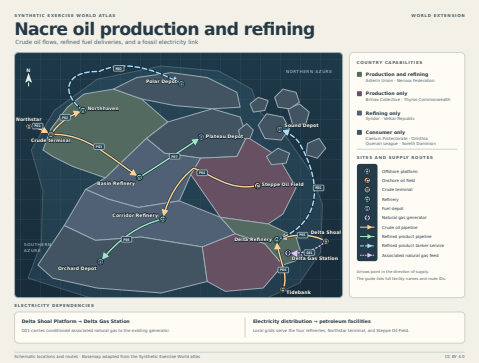
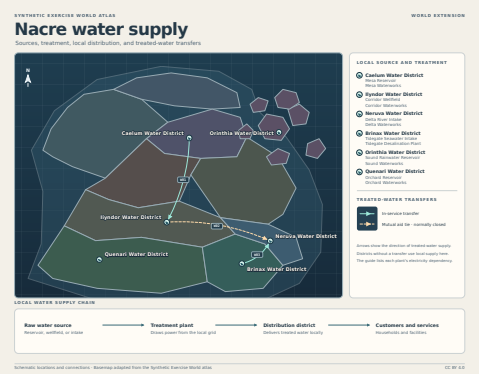
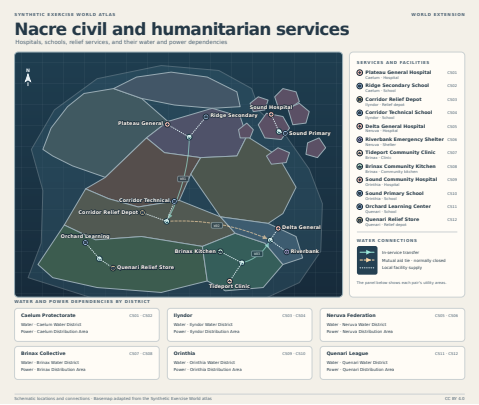
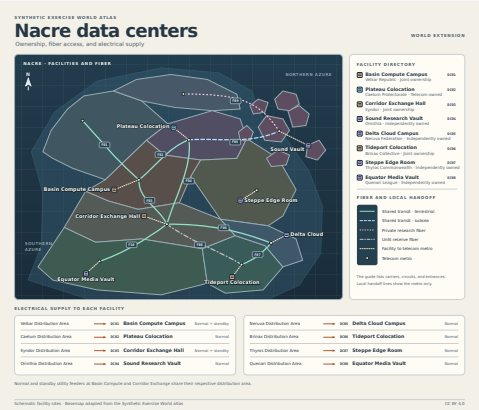
In NACRE-02, telecom defenders share URL and IP-port objects, replay proposed protections against synthetic traffic, and retire a withdrawn indicator. Telecom indicator-sharing exercise

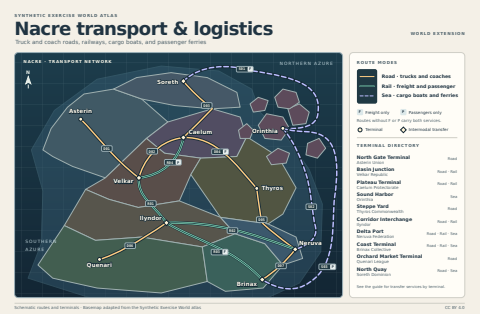
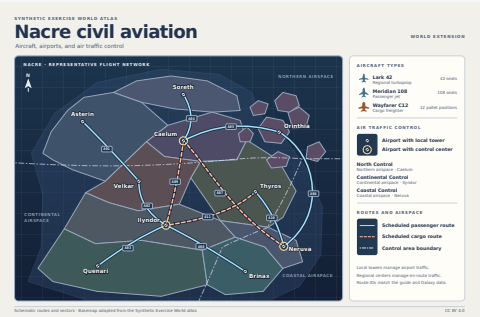
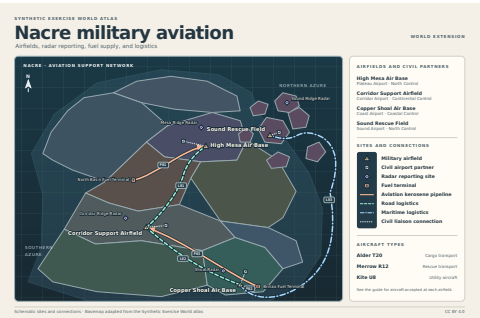
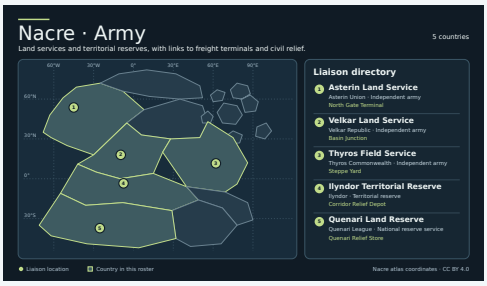
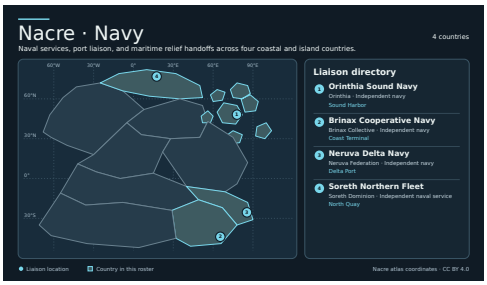
World extensions

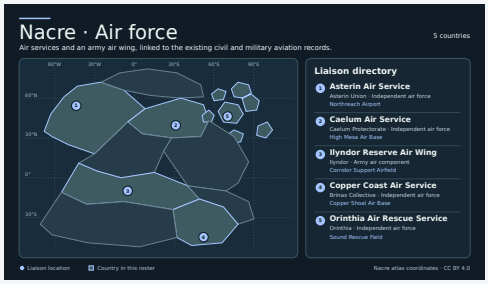
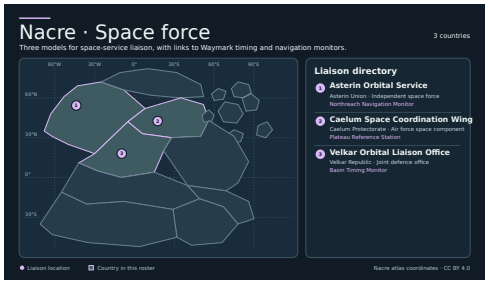
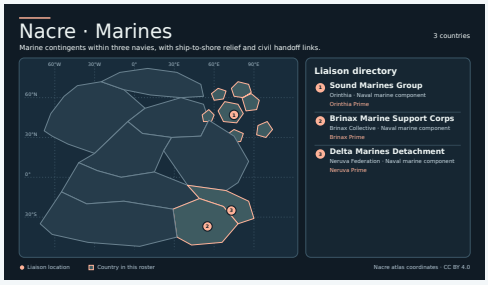
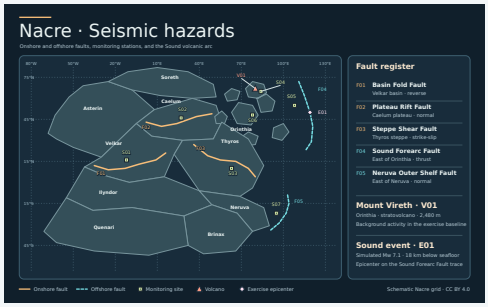
Select a preview to open its full-size SVG. Each extension guide includes a tabletop case and links to its MISP Galaxy definition and cluster collection. Extensions reference the base world's entities by UUID.

Map or diagram	Extension guide and coverage
	**Country flags** Original flags for all ten countries, with a visual index of countries and capitals.
	**Fictional communities** Invented ethnic identities and religions with illustrative associations across all ten countries.

Map or diagram	Extension guide and coverage
	**Telecommunications** Fixed and radio access operators, shared and restricted fiber links, and a two-link outage exercise.
	**Satellite communications** GEO VSAT, MEO backhaul, and a low-latency LEO mesh with coverage footprints and links to terrestrial telecom.
	**Satellite navigation** Fictional positioning, navigation, and timing broadcasts, visibility footprints, and a defensive exercise on suspected jamming.
	**Electricity** Renewable, nuclear, and fossil generation, cross-border transmission, local distribution, and an island supply shortfall exercise.

Map or diagram	Extension guide and coverage
	**Oil production and refining** Country capabilities, offshore and onshore crude supply, pipelines, refineries, and fuel links to the electricity grid.
	**Water supply** Water sources, treatment plants, local distribution districts, and treated-water transfers across part of Nacre.
	**Civil and humanitarian services** Hospitals, schools, shelters, and relief facilities with links to water, electricity, telecom, and transport.
	**Data centers** Facility ownership and operation, carrier circuits, shared fiber entrances, and electricity grid connections.

Map or diagram	Extension guide and coverage
	**Transport and logistics** Truck and coach roads, freight and passenger rail, cargo boats, ferries, and rerouting after a berth closure.
	**Civil aviation** Aircraft, airports, air traffic control, scheduled passenger and cargo routes, and an airport diversion exercise.
	**Military aviation** Military transport aircraft, airfields, radar reporting, aviation kerosene pipelines, and relief logistics coordinated with civil aviation.
	**Army** Land services and territorial reserves, with links to freight terminals and civil relief.
	**Navy** Naval services, port liaison, and maritime relief handoffs across four coastal and island countries.

Map or diagram	Extension guide and coverage
	**Air force** Air services and an army air wing, linked to the existing civil and military aviation records.
	**Space force** Three models for space-service liaison, with links to Waymark timing and navigation monitors.
	**Marines** Marine contingents within three navies, with ship-to-shore relief and civil handoff links.
	**Coast guard** Military and civilian coast guard models, with rescue, safety, and port reception links.
	**Seismic hazards** Onshore and offshore faults, seven monitoring sites, Mount Vireth, and a coastal earthquake exercise.

Community integrations

- Range42, an open-source cyber range platform, is integrating the dataset as a neutral narrative layer for its MISP lab, scenario manifests, reporting workflows, and future exercise-management tooling. The work is tracked in range42/project_management#106, with implementation in range42/range42-catalog#211 and range42/range42-playbooks#151. Status: integration in progress.

PDF documentation

The PDF combines this README, the geographic atlas guide, and every extension guide. GitHub Pages serves the PDF from the latest published build of `main`. Download the documentation PDF

Pull request builds also attach the PDF as the `synthetic-exercise-world-pdf` artifact. Build documentation PDF

To build locally, install Python 3.9 or later and Quarto 1.9.38, then run this command from the repository root.

```
python3 scripts/build_pdf.py
```

The PDF is written to `_book/synthetic-exercise-world.pdf`. The build downloads the pinned MISP Book Typst layout, logo, and fonts, and uses the maps in the current checkout. The layout is credited to the MISP Book contributors under CC BY-SA 4.0, with the cover and running text adapted for Synthetic Exercise World. The fonts use the SIL Open Font License 1.1. MISP Book PDF template

Contributing

Contributions can be made through the public GitHub repository by opening issues for proposed changes or submitting pull requests with new synthetic entities, metadata improvements, maps, diagrams, or documentation updates.

Repository: https://github.com/MISP/Synthetic-Exercise-World-Format

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All countries, companies, sectors, and threat actors described in this project are fictional and intended for neutral CTI exercises, documentation, testing, and training.

CHAPTER 01

Nacre geographic atlas

The atlas registers country boundaries, capitals, and extension features to the latitude and longitude grid printed on the clear Nacre map. The GeoJSON covers 323 features across 20 layers. Open the standalone atlas in a browser to filter layers, search for a feature, and inspect its coordinates or endpoints. Browsers that require HTTP can load the atlas through `python3 -m http.server --directory geography` from the repository root.

1.1 Coordinate reference

`nacre-atlas-v1` is a fictional latitude and longitude grid on Nacre. GeoJSON positions use `[longitude, latitude]` in decimal degrees, with east and north positive. Veyra depths are separate properties in kilometres below the local surface. The coordinate convention is familiar to GIS tools. The basemap and positions belong to Nacre.

The clear SVG atlas is the reference artwork. Its zero meridian and equator are at SVG coordinates `x = 455.351786` and `y = 351.565714`. One degree is `3.587142857` SVG units along either axis. The painted planet map and Veyra cutaway are illustrations with their own framing. Clear atlas

1.2 What the geometries represent

Feature	Representation
Countries and capitals	Country boundaries trace the clear atlas and use the original MISP country UUIDs. Capital locations come from the atlas star markers. Orinthia has seven polygon parts.
Ground facilities	A point places each site on the shared grid. Existing markers were registered to the grid, with placements adjusted where needed to fit the named country. Water sources and plants have representative locations near their districts.
Utility districts and hubs	A point identifies each district's representative anchor.
Force liaison points	Each point uses an existing host facility or capital. The service model identifies whether the organization is independent, a component, a reserve, or a civilian authority.
Transport and utility routes	LineStrings follow the schematic corridors and terminate at registered endpoints. Data center circuits and feeds show logical handoffs, with the underlying assets identified by UUID.
Seismic hazards	LineStrings trace onshore and offshore faults. Points mark monitoring sites, Mount Vireth, and the exercise epicenter. Its depth is measured below the local seafloor.
Veyra	Surface coordinates register the three crossings and underground landmarks. Depths remain separate. The Veyra access entry shows the known surface entrances.
Satellite footprints	Polygons register the illustrated coverage windows or snapshot. They describe surface visibility.
Country flags and petroleum profiles	These records reuse their country's geometry. Community examples, aircraft types, organizations, and logical satellite links retain their existing relationships.

1.3 Using the Galaxy metadata

Use `meta.geographic-feature-id[0]` to join an extension record to the GeoJSON `Feature.id`. IDs are normally the original record UUID. Country flags and petroleum profiles point to the

referenced country UUID instead. Point records also include `meta.latitude` and `meta.longitude` as separate single-value arrays. These fields use `meta.coordinate-reference = ["nacre-atlas-v1"]`.

The local base layer gives upstream country records their geometry through the existing UUIDs. Country and capital names were checked against the pinned cluster. MISP Galaxy revision `779b780`

1.4 Updating the atlas

Edit the GeoJSON and any affected Galaxy metadata together. Run these commands from the repository root to check the geometry, UUIDs, endpoints, and metadata, then refresh the standalone browser copy.

```
python3 geography/validate.py --write-atlas
python3 geography/validate.py
```

The atlas uses the CC BY 4.0 Nacre artwork and extension diagrams. License

CHAPTER 02

Run a Nacre exercise in MISP

Use this walkthrough to load the Synthetic Exercise World Galaxy, build a synthetic incident record, and exchange reviewed findings across separate MISP instances. It uses **NACRE-01 · Delta Port dispatch delay** as a worked example. A single instance is enough for the event, report, and assessment walkthrough. The federation steps add independent teams and a receiving-side verification exercise.

Use the latest version of MISP for the exercise. The screenshots show the MISP interface with MISP Book training data. Menu locations can vary by release. Use the named actions and the Nacre values from the walkthrough. Latest MISP release

For a second walkthrough focused on defender decisions and indicator sharing, use the NACRE-02 telecom exercise.

2.1 Prepare the exercise environment

1. Set up a dedicated MISP instance for each participating team and one for Exercise Control. Give each instance its own database, Redis, files, credentials, and HTTPS base URL. Use separate hosts or isolated Compose deployments with distinct ports and storage. Use certificates trusted by the exercise instances. MISP Book Docker quick start
2. Run the same MISP version on every instance. Record the MISP version and the exercise-repository and Galaxy revisions in the facilitator's run sheet. Use a unique local host organisation and keep a roster of its UUID, instance URL, and facilitator contact. MISP Docker deployment
3. Give exercise authors permission to create and edit their organisation's events, attach tags and Galaxy clusters, and create Analyst Data. Give publication permission to the designated reviewer. Use separate Sync user accounts for instance-to-instance sharing and leave production peers, feeds, email notifications, and downstream detection integrations outside the exercise.
4. Use the same fictitious country names and incident ID in all handovers. Give defenders the public brief and keep the later injects with Exercise Control. Start with manually triggered sync so the facilitator can see who received each item.

2.2 Load the Nacre Galaxy and clusters

MISP loads a Galaxy definition from `galaxies/` and its cluster collection from `clusters/`. Install both files on every peer. NACRE-01 uses the base `exercise-world` pair and the `exercise-world-transport` extension. Other extensions can be added using the dependencies in their individual guides. Keep the original UUIDs and use the same catalog revisions on all teams' instances. World extensions

For the official Docker setup, run this from the Compose directory on each exercise host. Set `sewf` to the absolute path of the checked-out Synthetic Exercise World repository on that host.

```
sewf=/path/to/Synthetic-Exercise-World-Format
base_rev=779b780a13f67288d9b1a031b064fb140cdacaae
upstream=https://raw.githubusercontent.com/MISP/misp-galaxy
catalog=$(mktemp -d)
galaxy_dir=/var/www/MISP/app/files/misp-galaxy

for kind in galaxies clusters; do
  mkdir -p "$catalog/$kind"
  curl --fail --silent --show-error --location \
    "$upstream/$base_rev/$kind/exercise-world.json" \
    --output "$catalog/$kind/exercise-world.json" || exit 1
```

```
  cp "$sewf/extensions/transport/$kind/exercise-world-transport.json"
\
    "$catalog/$kind/" || exit 1
  for file in "$catalog/$kind/"*.json; do
    docker compose cp "$file" "misp-core:$galaxy_dir/$kind/" || exit
1
  done
done

docker compose exec -T --user www-data misp-core \
  /var/www/MISP/app/Console/cake Admin updateGalaxies
```

For other deployments, stage the same pairs under the instance's `app/files/misp-galaxy/` and run `cake Admin updateGalaxies` as the MISP service user, or use **Update Galaxies** in the admin interface. Check the staged files after a container rebuild or catalog refresh. If the database already holds a newer version, agree on a common catalog version across peers and verify the expected entries. The standard update follows version rules. Keep the build revisions with your exercise notes. Galaxy loading and version handling

Open **Data models → Galaxies**. Find **Synthetic Exercise World** and verify that the pinned base catalog contains 60 entries, including **Neruva Federation**, **Velkar Republic**, and **TA-701 Silver Mantis**. Open the transport Galaxy and look for **Delta Port**, **Coast Terminal**, and **Sound Harbor**. If the picker later omits a cluster, check that the paired files were loaded and the Galaxy is enabled.

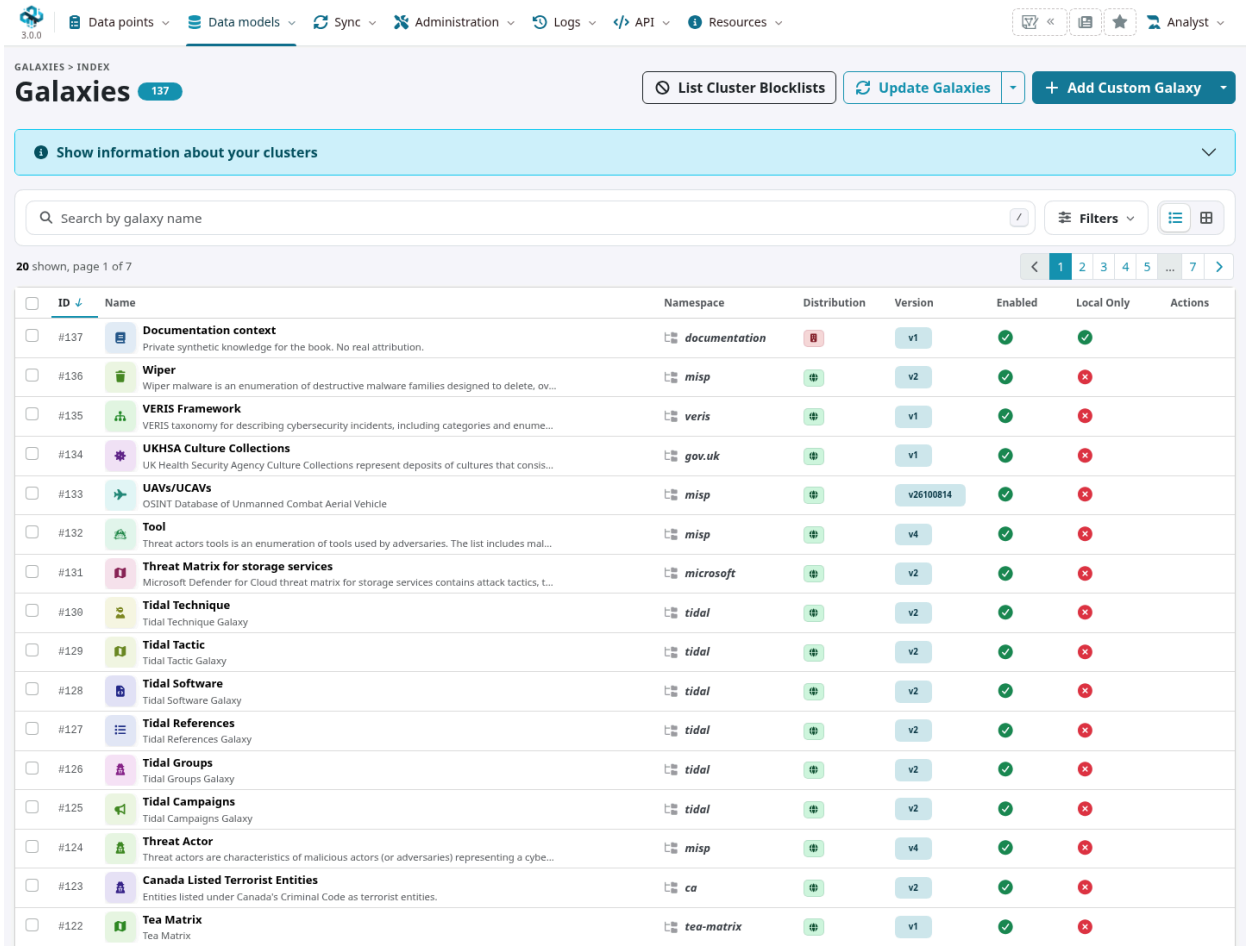


Figure 2.1: The MISP Galaxy catalogue with search and management controls.

2.3 Create the synthetic event

On the Exercise Control instance, open **Data points → Events → Add Event**. Use **[EXERCISE] NACRE-01 · Delta Port dispatch delay** as the event title. Set the event date to **2026-11-18** for the worked example,

Analysis level to **Initial**, **Threat level** to **Undefined**, and **Distribution** to **Your organisation only**. Leave it unpublished while preparing the evidence and report. Record the saved event UUID.

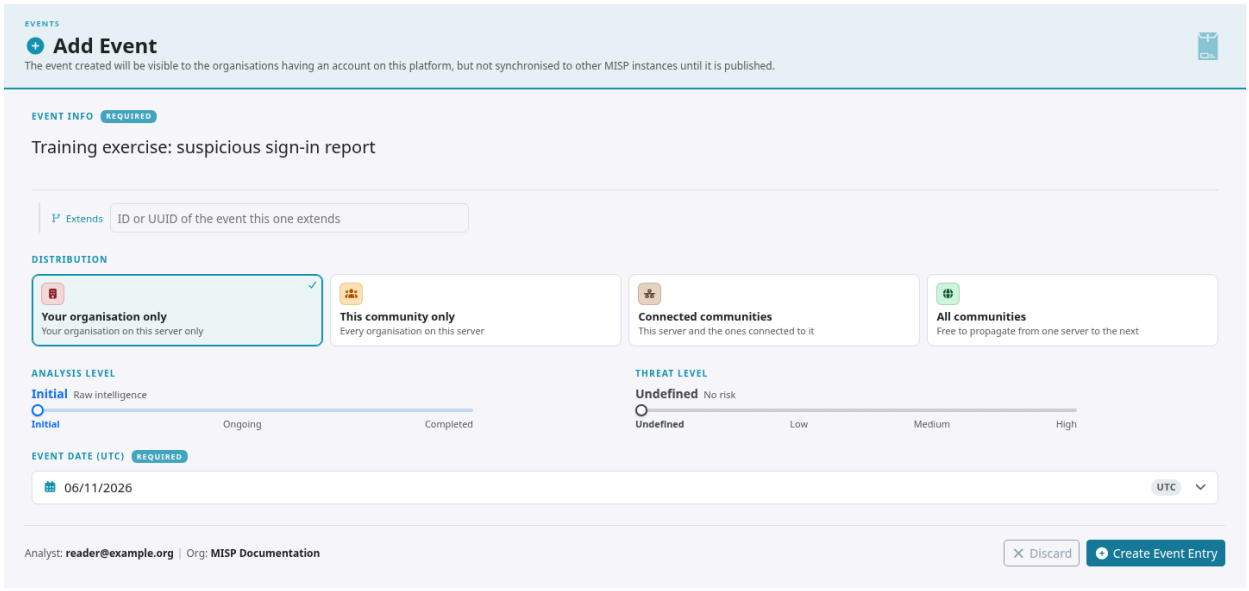


Figure 2.2: The MISP Add Event form with the organisation-only audience selected.

In the event's **Attributes** tab, add these two entries under **Network activity**. Choose **Inherit event** and leave **For IDS** off for both. The values come from the reserved `.example` domain and the documentation address block.

Type	Value	Observation comment
`domain`	`dispatch.delta-port.example`	Synthetic dispatch log, 2026-11-18 09:05 UTC
`ip-dst`	`192.0.2.44`	Simulated destination in the same exercise log

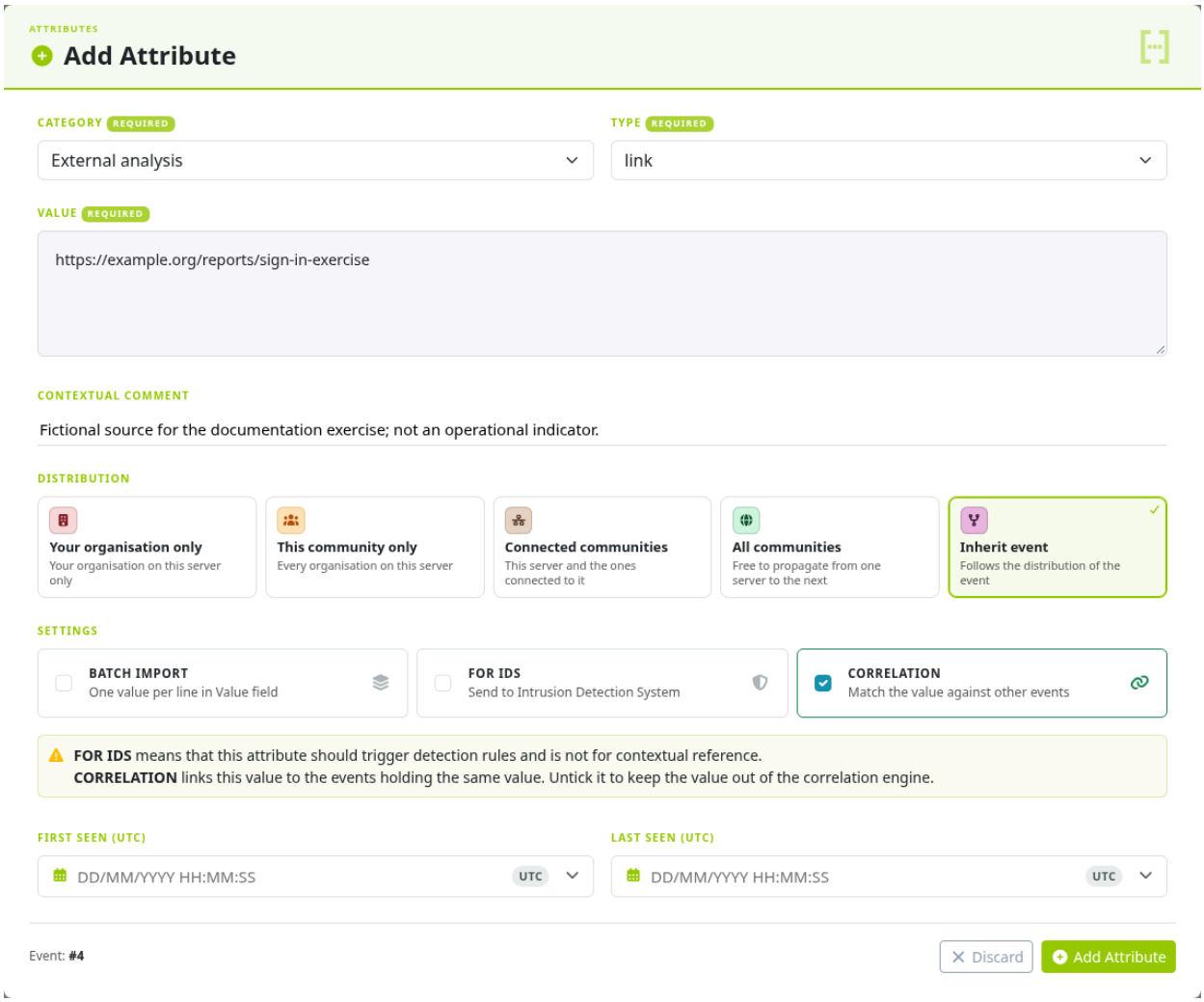


Figure 2.3: The MISP Add Attribute form showing category, type, audience, and IDS eligibility.

To use a ready-made starting event, open **API → REST client**, select **POST**, and enter `/events/add`. Set the request format to JSON, use an API key for an authorised Exercise Control author, and paste the NACRE-01 JSON into the request editor. Choose this path or create the event manually. The fixture's event and attribute UUIDs are fixed for one run. Use fresh UUIDs when seeding a separate run in the same database. Confirm that the response lists both attributes, reports no validation errors, and leaves the event unpublished and organisation-only. MISP event API

Open the event's context or Galaxy controls and use the cluster picker to attach **Neruva Federation** and **Delta Port**. Inspect the selected values before saving. In this exercise, set the attachment scope to **global** for context you intend to travel with the released event. The draft's event distribution still controls its audience. Team-only analytic tags can stay local. Keep the actor name in the assessment as a scenario hypothesis and use Galaxy tags to record the confirmed country and site context.

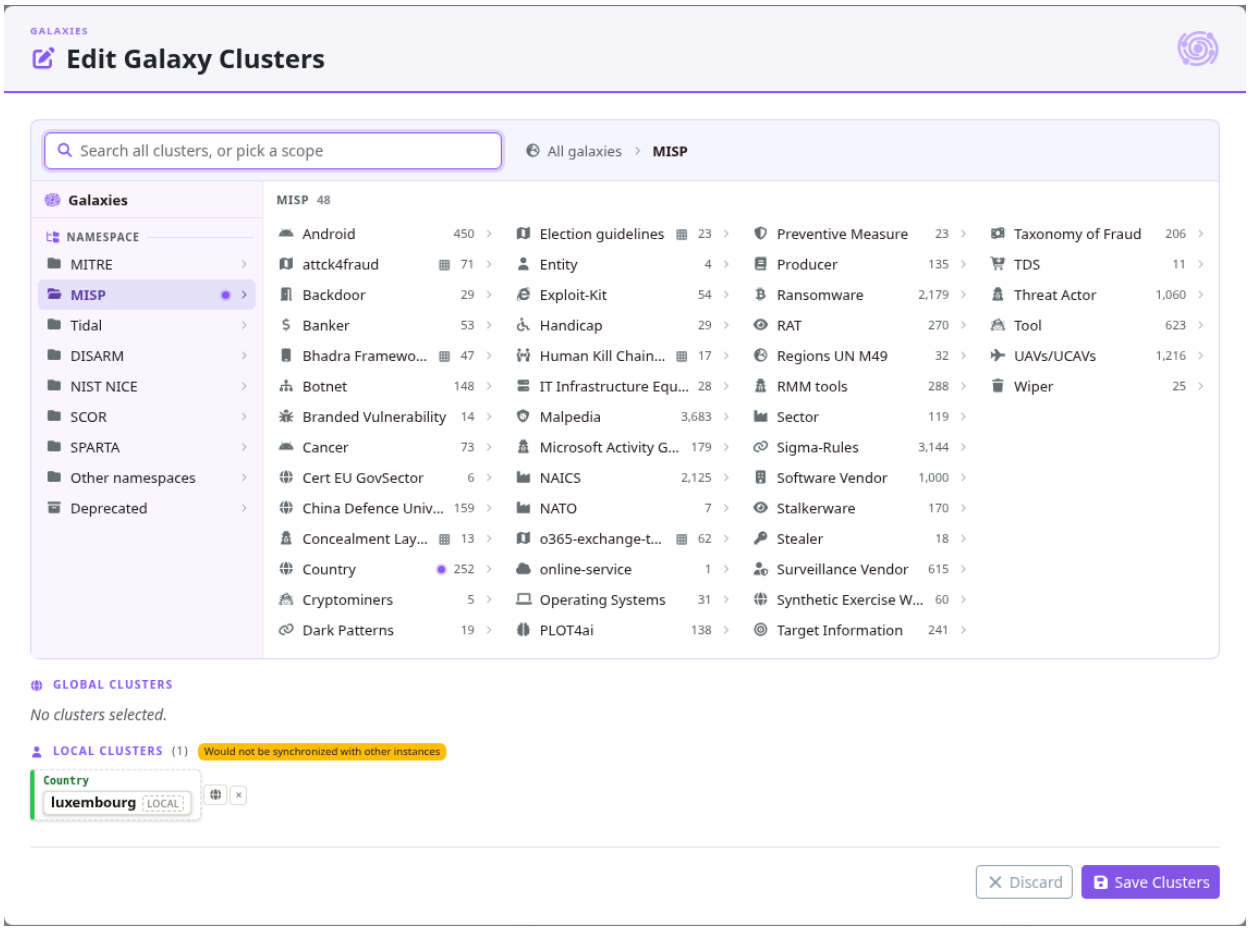


Figure 2.4: The MISP Galaxy cluster picker showing the attachment scope choice.

2.4 Write and review the event report

From the event's **Reports** tab, choose **Write a report** or **Add report**. Use the title **NACRE-01 · Initial situation report** and set **Distribution** to **Inherit event**. Use this structure in the Markdown editor.

```
## Observed
At 09:05 UTC, the simulated Delta Port dispatch queue stopped
advancing.
Source is the exercise dispatch log.

## Assessment
Port dispatch is degraded. The cause is undetermined.
The facilitator supplied an unconfirmed TA-701 Silver Mantis
hypothesis.

## Action and next update
Neruva will check the local dispatch record and confirm the berth
status.
Exercise Control will check with Brinax and Orinthia before the 09:30
UTC update.
```

Use **Edit Content** and the element controls to insert a live reference to the domain attribute in **Observed**. A manually written reference has the form `@[attribute](UUID)` with the attribute UUID from this instance's saved event. Select **Save** and open **General** to verify that the reference resolves and the report states its evidence, uncertainty, and next action. Check distribution before publishing and verify the rendered report on the receiving instance. Readers need access to referenced records. MISP event report documentation

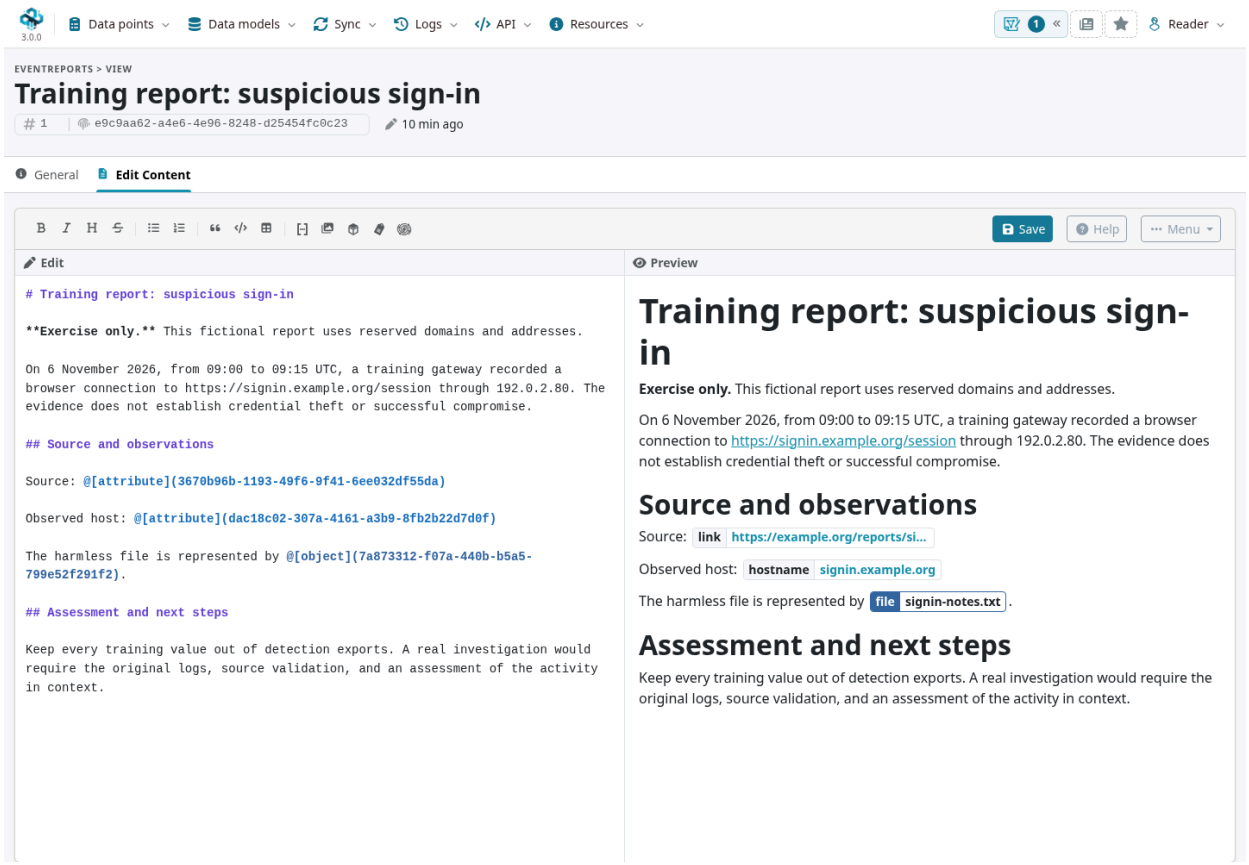


Figure 2.5: The MISP report editor with Markdown, element controls, and the rendered preview.

2.5 Record analyst data and publish

Open the event's **General → Assessment** card. The add control exposes the annotation types permitted by your role. Start with **Your organisation only** for each annotation. Analyst Data has its own distribution, so choose the intended audience separately before a handover.

Annotation	What to create
Note	Attach a note to the initial event or report. Record that the source is an exercise log and that the observed queue delay leaves several possible explanations.
Opinion	Attach a **50 (Neutral)** opinion to the initial report. Explain that the report is plausible and the scenario hypothesis lacks corroboration.
Relationship	Once the Neruva team creates its response event, add a directed `derived-from` relationship from that event to the Exercise Control event by UUID and choose **Event** as the target type.

Use the relevant attribute's **Sighting details** control if a team receives an independent synthetic observation of the same domain. Record its time and source with the occurrence. The sighting records an observation, while the report and its annotations carry the team's interpretation. MISP Analyst Data documentation

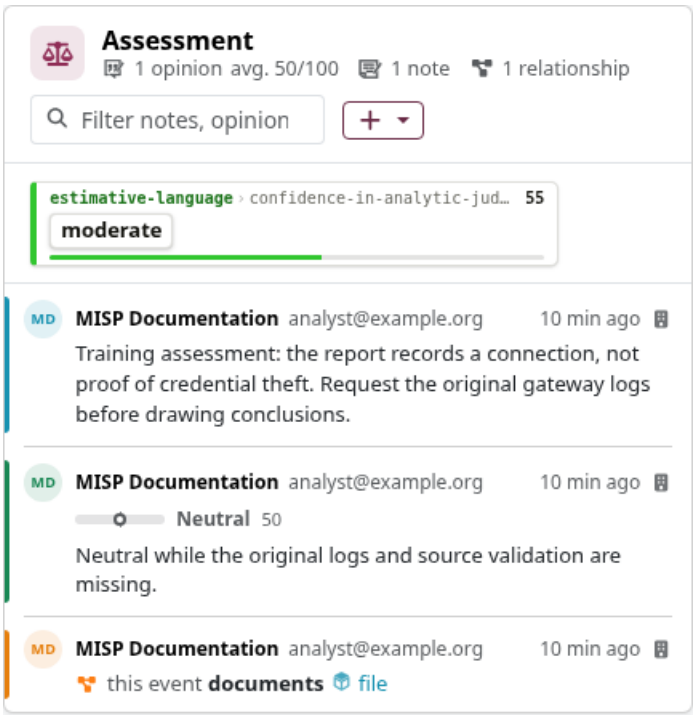


Figure 2.6: The MISP Assessment card displaying a Note, an Opinion, and a Relationship.

Before sending the event, have the reviewer check the two attributes, attached clusters, report references, and each record's audience. On a single instance, publish the reviewed event with **Your organisation only** and notifications off. For team exchange, first complete the release pilot below. Then change the event to the approved sharing group, set the report to **Inherit event** if it goes to the same recipients, and review the audience of each analyst record. Select **Publish** with notifications off and verify receipt. A draft's privacy depends on its distribution. MISP publication and review

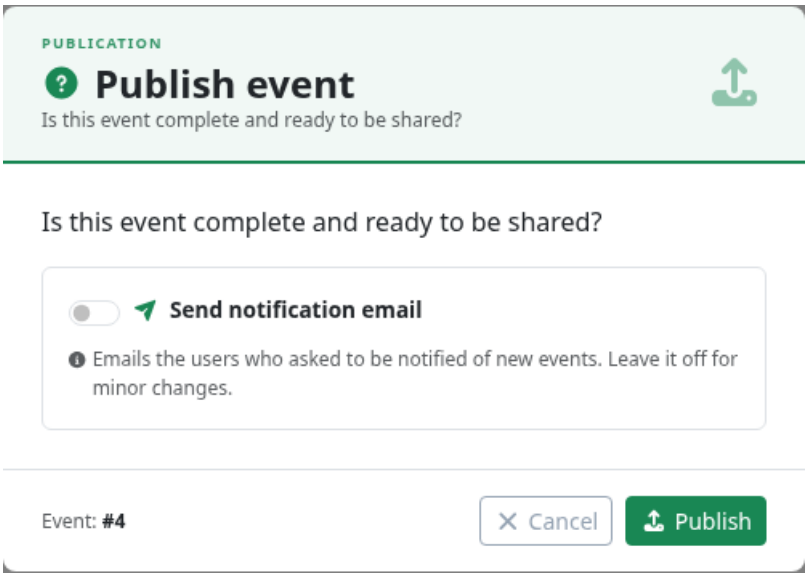


Figure 2.7: The MISP Publish dialog with the optional notification switch.

2.6 Run the exercise across separate instances

In this round the facilitator selects **Neruva Federation** as the target and asks the Velkar scenario cell to draft adversary-side injects for Exercise Control. These are fictional observations and timed messages. The defenders use MISP to build and share an evidence-based picture and coordinate service continuity.

Instance and host organisation	Exercise assignment	What the team produces
Ilyndor Control	Own the scenario and release each inject to its intended recipients.	Initial event, audience register, and final timeline
Neruva Defenders	Assess the Delta Port disruption and coordinate the local response.	Evidence notes and a port operations update
Brinax Defenders	Defend Coast Terminal operations and assess whether a receiving berth is available.	A capacity and readiness report
Orinthia Defenders	Defend Sound Harbor operations and account for delayed sailings.	An independent dispatch or sailing status report
Velkar Scenario Cell	Plan fictional injects about the selected target and propose what each team would observe.	Draft inject reports for the facilitator's review

Control can collect inject drafts in a separate MISP instance for the scenario cell, or through a facilitator-only exchange. Keep this review channel separate from the defender peers. Use the transport map to see why the teams need different reports. In this round the Azure Ro-Pax route connects Sound Harbor and Delta Port, and the Brinax Island Ferry connects Sound Harbor and Coast Terminal. Transport and logistics extension

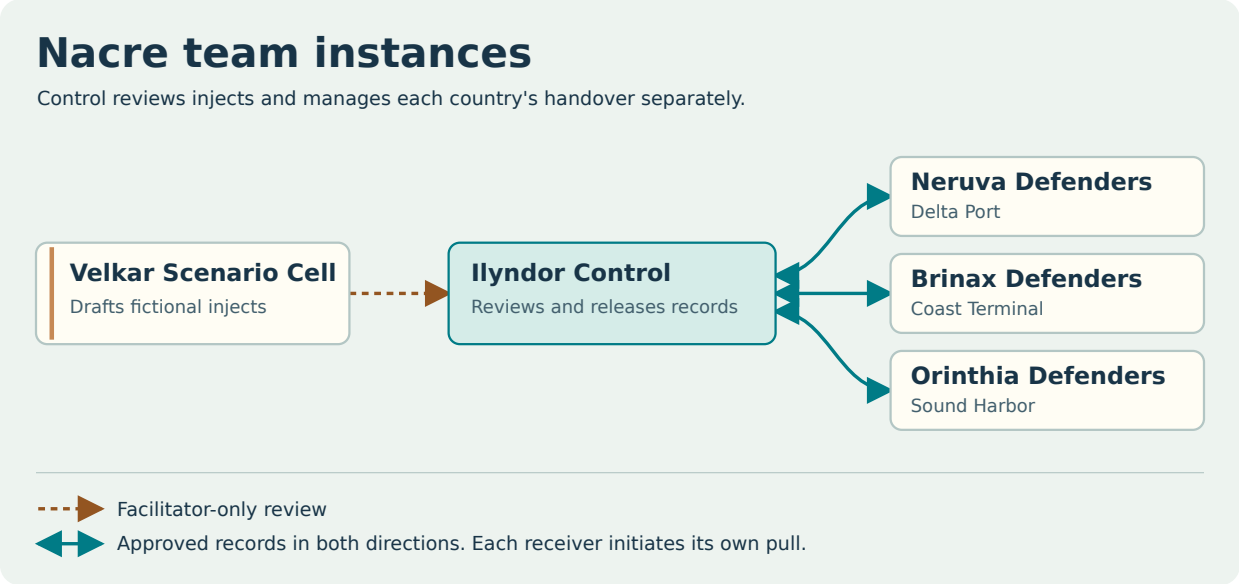


Figure 2.8: Exercise topology showing the Velkar scenario cell, the Ilyndor control hub, and three separate defender instances.

2.6.1 Prepare an adversary-side inject

On the Velkar instance, create the organisation-only draft **[EXERCISE] NACRE-01 · Inject 01**. Attach **Neruva Federation** and **Delta Port** as the target context. In its report, give Control the planned release time, the intended recipient, the fictional observation, and the decision you want to exercise. For the initial inject, use **09:05 UTC**, **Neruva Defenders**, and **the dispatch queue stopped advancing**. The decision is whether the team can verify the interruption and continue port operations while attribution remains uncertain. Keep facilitator notes and the adjudication criteria in the review channel. Control releases the approved observation through the initial event.

For a different round, choose another country and an existing facility from its Galaxy and extension map. Update the target tags, scenario observations, receiving group, and expected response together. Record any fictional actor claim as a hypothesis in the recipient brief.

2.6.2 Set up one pull, then repeat for each country

For **Neruva to pull reviewed injects from Control**:

1. On **Control**, create or identify a local organisation record representing **Neruva Defenders**, using its UUID from the Neruva instance. Create a dedicated **Sync user** in that organisation and issue a scoped API key for this peer.

2. On **Neruva**, a site administrator opens **Sync → Servers & Feeds → Servers → Add Server**. Enter Control's HTTPS base URL, select **Ilyndor Control** as the organisation hosting the remote instance, and use the key issued by **Control**. The host-organisation UUID and the remote key's account organisation represent different identities.
3. Under **What to synchronise**, enable **Pull** for **Events**. Enable **Pull** for **Analyst data** only for a pilot that explicitly includes approved annotations. Leave **Push**, remote value caching, and the remaining data types off for this connection. The Nacre default Galaxy catalog is already loaded on both instances.

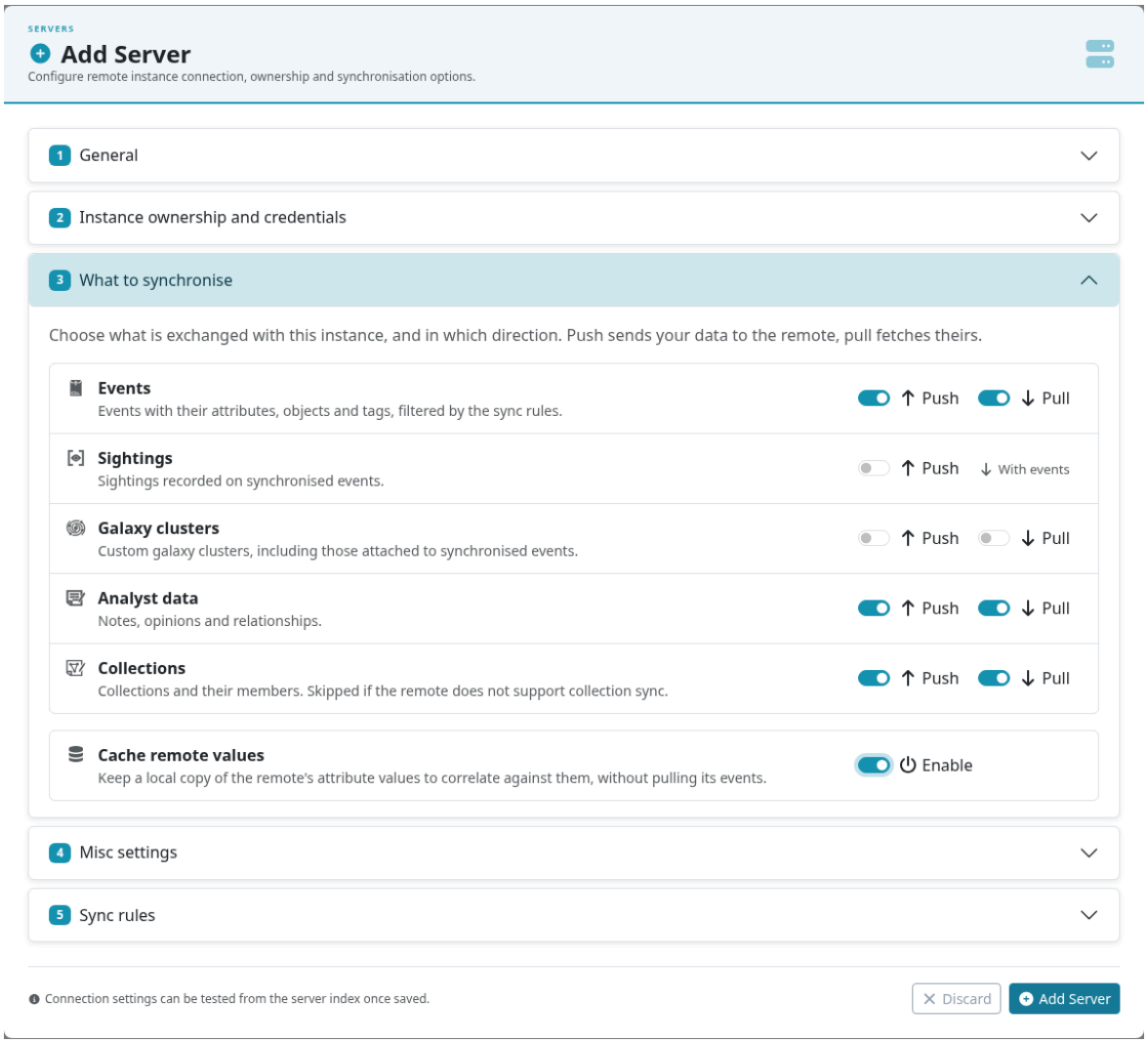


Figure 2.9: The MISP server form lists separate push and pull controls for Events and Analyst Data.

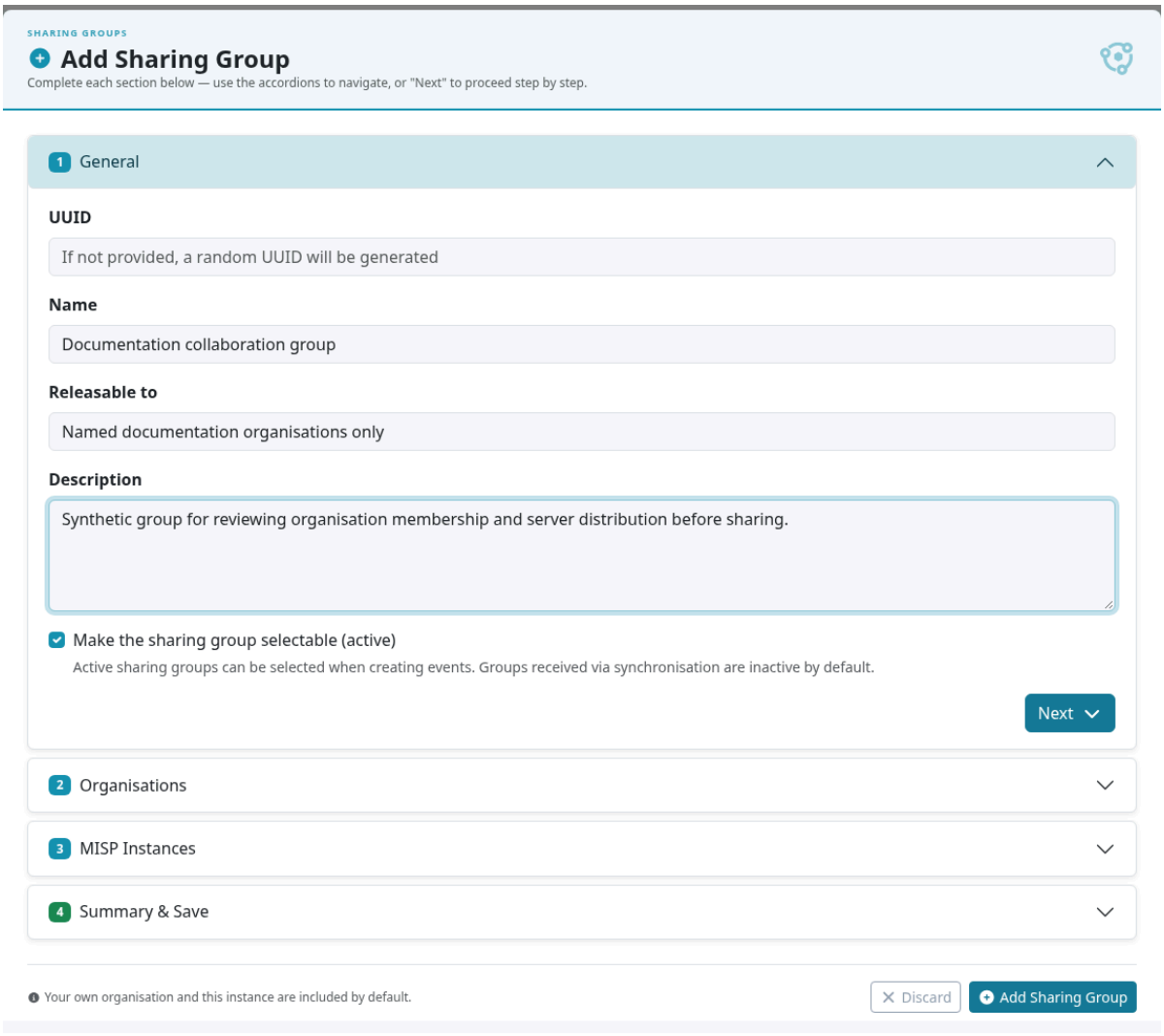


Figure 2.10: The MISP sharing group editor shows the organisation and server membership controls.

For **Control to pull Neruva's approved responses**, reverse source and receiver. Issue a different key on **Neruva** to a **Sync user** representing **Ilyndor Control**, and configure a peer on **Control** pointed at the **Neruva** host organisation. Repeat the same pattern for Brinax and Orinthia using separate credentials and peers. MISP synchronisation and account identities

After the peer records exist, open **Sync → Sharing Groups → List Sharing Groups** on each source. Create an active group for that handover. For the Control-to-Neruva group, include **Ilyndor Control** and **Neruva Defenders** and their corresponding servers. Keep **All organisations** off for those servers. Set the group's membership before selecting it as an event's distribution, review roaming and extender settings, and verify access with an ordinary recipient account. Use separate groups for other countries. MISP sharing group setup

2.6.3 Set the rules and run a release pilot

1. Create agreed global event tags on the exercise instances. This run uses `nacre-01:handover="approved"` and `nacre-01:handover="hold"`. Record both as exercise workflow labels. The sharing group defines audience and the tags narrow candidacy for this pull.
2. In the receiving server entry's **Pull rules**, allow the approved tag, block the hold tag, and allow the source host organisation by UUID. Save the rules. Keep scheduled pulls paused while testing. MISP pull rules
3. On the source, prepare a shareable pilot with the approved tag and matching sharing group. Also create a published synthetic control record with the same group and both tags to test the block rule. Keep a third draft organisation-only. Use a separate pairwise group when testing whether another country is excluded.

4. Use **Test connection**, then **Test Pull Rules** from the server list. Confirm the candidate set and select **Pull all** on the receiver to exercise the saved rules. Check the job and compare actual event UUIDs, creator organisation, distribution, global tags and Galaxy attachments, report links, and any enabled Analyst Data. Verify that the held record and private draft stay out of the receiving instance.
5. Open the result as an ordinary recipient and check that the group covers the intended readers. Repeat the positive and negative checks for every direction and country before running a timed round. If an annotation is missing, check its own distribution and the peer's **Analyst data** switch in addition to the parent event's result. MISP pilot procedure

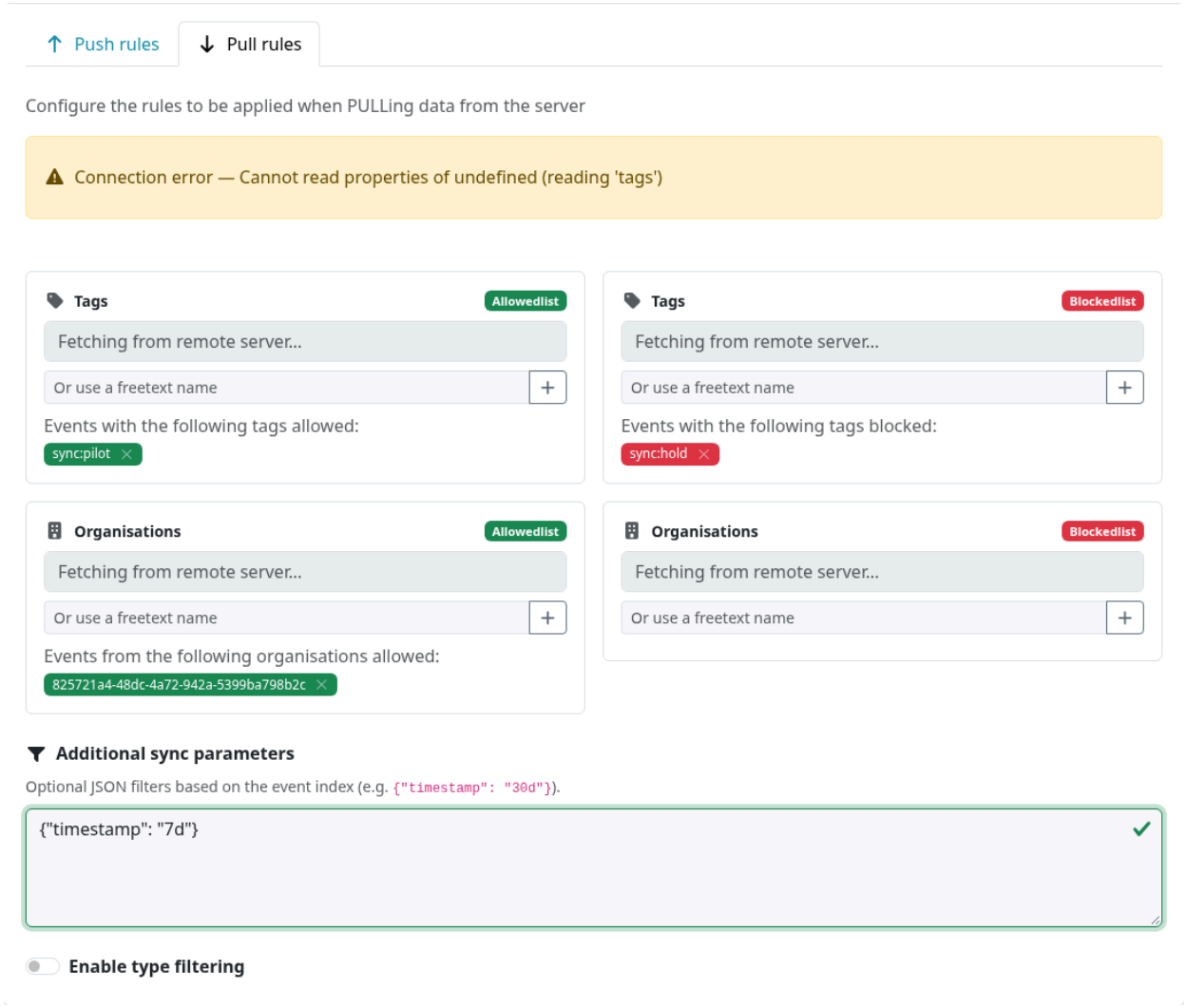


Figure 2.11: The MISP Pull rules form with separate allow and block lists for tags and organisations.

For each approved inject or response, select the intended sharing group, apply the approved tag, and clear any hold tag as part of review. Publish the reviewed version and have the recipient run **Pull all** on the saved peer. Record the event UUID, intended audience, and receipt confirmation in Control's handover log.

For an exercise without server sync, have Control share a reviewed **MISP JSON** event export through the agreed exercise channel. On the recipient, review the import audience and publication settings before uploading the export. Confirm the event UUID, creator, fields, and locks after import. Use the locally authored **POST `/events/add`** fixture only to seed the original exercise event. MISP event exports

2.6.4 Run the round and debrief

Exercise time	Facilitator releases	Expected response
09:05 UTC	Delta Port dispatch queues stop advancing. Give the two synthetic log values to Neruva.	Neruva records the observation, opens a response, and separates impact from the unconfirmed actor hypothesis.

Exercise time	Facilitator releases	Expected response
09:20 UTC	Brinax receives a request for an alternate berth. Orinthia receives a synthetic delayed manifest.	Each team records its own observation and sends a narrow update to Control with the incident ID.
09:30 UTC	A maintenance record offers a second explanation for the initial queue interruption.	Teams reassess their opinions, update the reports, and explain which assessments changed and why.
09:45 UTC	Control closes the round and compares the expected and received records.	Teams hand in their event and report UUIDs, evidence, remaining uncertainty, and recipient verification.

On each defender instance, create a locally owned response event. Enter the Control event UUID in **Extends** if the parent event is accessible to the response's intended readers. For a standalone response, put the incident ID in the title and use the directed Analyst Data relationship where the target is visible. Use a short report with local findings, the action taken, and the next update. Publish it through the reviewed group for Control. The facilitator can prepare a separate shared summary for the other countries. MISP extended events

In the debrief, check four outcomes. Defenders distinguished observations from hypotheses, separate teams kept their creator identities, the right recipients got each approved item, and the hold and private cases stayed within their intended audiences. Compare the first and final reports to see how the additional evidence changed the assessment. Keep approved exercise artifacts according to the exercise's retention plan, then pause temporary sync and retire the exercise keys.

2.7 Screenshot provenance

The unmodified screenshots use standalone MISP Book training data. The MISP Book contributors license these screenshots under CC BY-SA 4.0. The source tree below identifies the exact images, and its capture records document how they were made. MISP Book screenshot sources · CC BY-SA 4.0

- Galaxy catalogue and picker. Data-model capture record
- Event, attribute, report, Assessment, publication, and sharing group screens. Using MISP capture record
- Server sync controls and Pull rules. Sharing capture record · Pilot capture record

CHAPTER 03

Protect Nacre telecom services with shared indicators

NACRE-02 · DeltaReach indicator handover is a 60-minute defender exercise in MISP. One telecom operator shares two candidate indicators of compromise (IoCs). Its partners stage narrow protections, test them against simulated observations, and handle a correction without interrupting legitimate service. The exercise uses reserved domains and documentation IP addresses. Use the supplied replay CSV to simulate decisions in a spreadsheet or an offline test harness.

3.1 Set up the teams and the network

Team	Nacre infrastructure	Exercise task
DeltaReach · Neruva Federation	Delta Trunk (F06) to Ilyndor and Coastal Link (F07) to Brinax	Author the event, review the two indicators, and correct the guidance when new evidence arrives.
Corridor Exchange · Ilyndor	Shared transit to Neruva on F06	Stage a temporary exact-URL protection for the exercise web gateway. Verify that ordinary service checks still pass.
Tidegrid Fiber · Brinax Collective	Shared transit to Neruva on F07	Hunt for the complete destination IP, port, and protocol. Alert on the reviewed tuple during the exercise window.
Exercise Control	Facilitator and receipt log	Release the evidence and replay in order, track the permitted audience, and score each team's decisions.

F06 and F07 carry shared transit. Keep both paths available through the exercise. Use the network and operator names in the existing Galaxy catalog so each team works from the same topology. Telecom extension and map

Use one MISP instance per team, or separate organisations in one isolated instance to rehearse the decisions. For the multi-instance run, configure the two partner instances to pull approved records from the DeltaReach source, using the documented Sync user and receiving-peer procedure. Verify the sharing group with ordinary accounts before starting. MISP setup and sync pilot

On each instance, load the base `exercise-world` Galaxy and the `exercise-world-telecom` definition and cluster collection. In the linked import procedure, use the `extensions/telecom/` path and the `exercise-world-telecom.json` files in place of the transport pair. In **Data models → Templates → List Object Templates**, confirm that `url` and `ip-port` are enabled and that the object templates agree across peers. Galaxy loading procedure · MISP object templates

3.2 1. Record the evidence

Start at **09:15 UTC on 2026-11-19**. Control gives DeltaReach two synthetic records from earlier that morning. A web log entry (**URL01**) recorded the full URL at **09:10 UTC**. A separate exercise abuse report corroborates the path as the one to contain. An egress log entry (**FLOW01**) recorded the TCP destination tuple at **09:12 UTC**. The flow is a lead for review. The source logs supply two separate observations.

Create **[EXERCISE] NACRE-02 · DeltaReach indicator handover** on DeltaReach's instance. Use **Your organisation only**, **Initial**, and **Undefined** while preparing the draft.

From **Objects**, choose **Add Object** and select the template. Use the relations below. Give each object its source comment and observation time in **First seen** and **Last seen**. Set the objects and their attributes to **Inherit event**. Review the actual saved IDS flags and keep **For IDS** off for these exercise values.

Object	Relation	Value	Source
`url`	`url`	`https://updates.deltareach.example/session-review`	URL01 at 09:10 UTC
`url`	`host`	`updates.deltareach.example`	Host from URL01, for context
`ip-port`	`ip-dst`	`198.51.100.27`	FLOW01 at 09:12 UTC
`ip-port`	`dst-port`	`8443`	Same flow, type `port`
`ip-port`	`protocol`	`tcp`	Same flow, type `text`

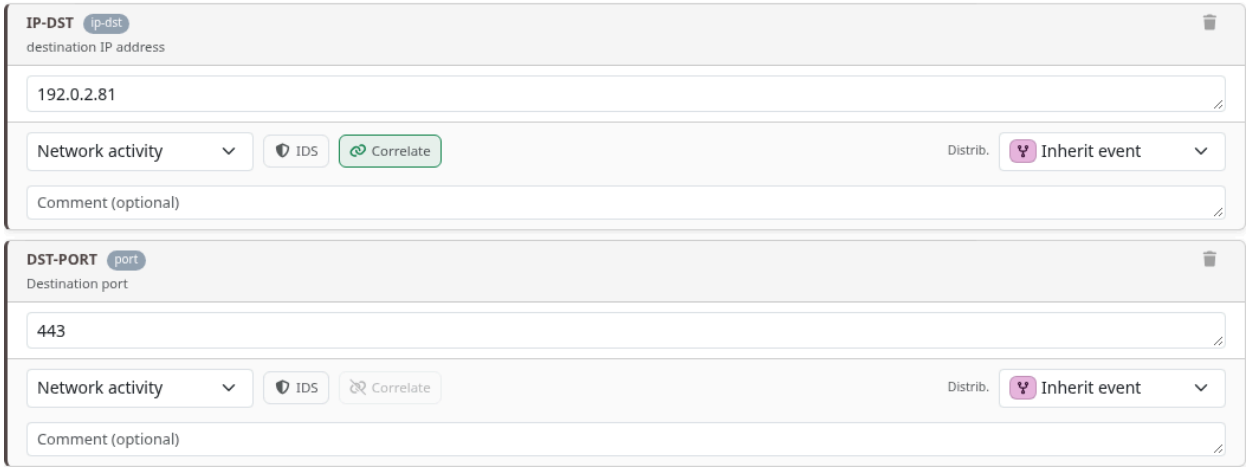


Figure 3.1: MISP's ip-port object form with separate destination address and port relations. The screenshot uses training values.

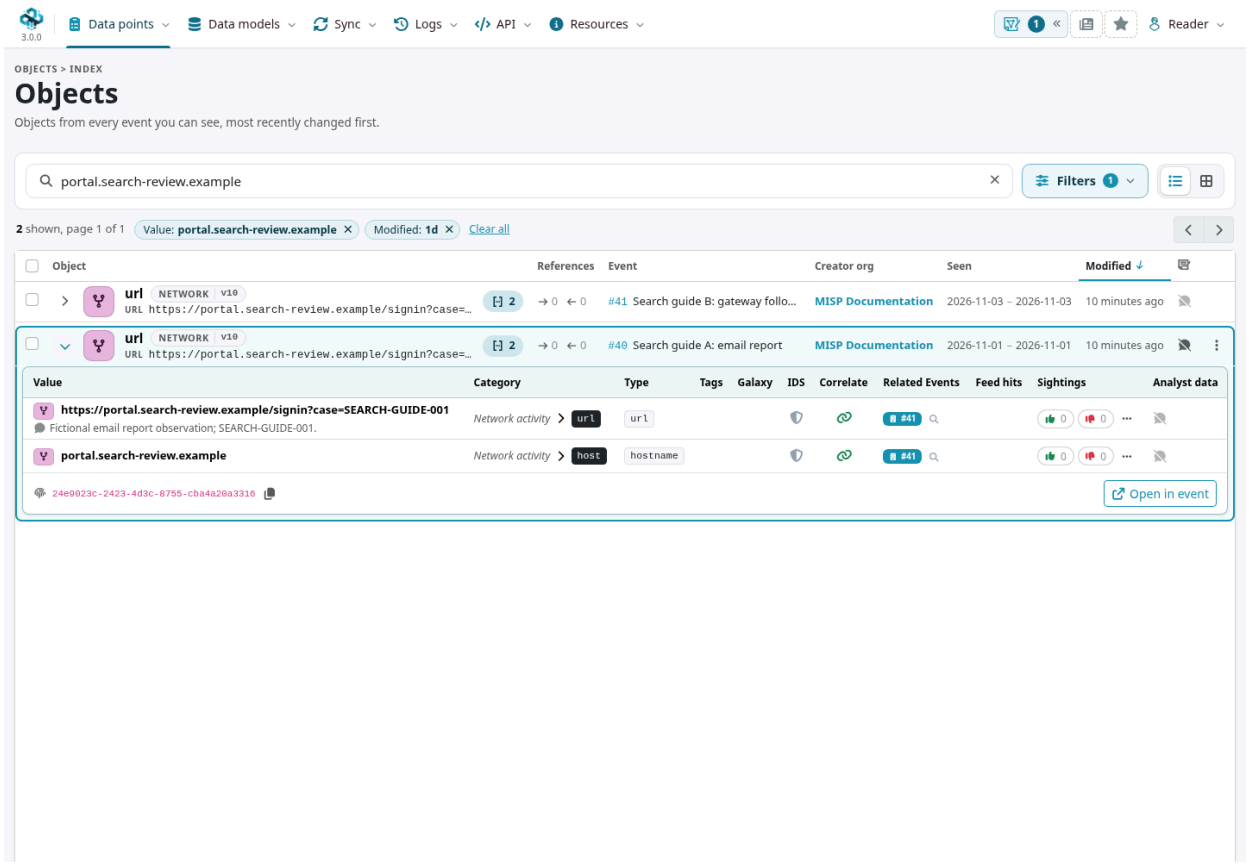


Figure 3.2: Expanded URL object in MISP showing the full URL and the host as distinct relations. The screenshot uses training values.

You can also create the unpublished event and both objects by pasting the supplied JSON into **API → REST client** and submitting **POST `/events/add`** on the DeltaReach instance. Use a key for an authorised author. Inspect the response and saved Objects tab, then attach the Galaxy context below. The fixture uses fixed event, object, and attribute UUIDs. Use fresh UUIDs for an independent run on the same instance. NACRE-02 starter event · Pinned URL template · Pinned IP-port template

3.2.1 Attach the Galaxy context

After creating the event and objects, either manually or with the starter JSON, open the event's Galaxy picker. Attach **Neruva Federation** from **Synthetic Exercise World** and **DeltaReach**, **Delta Trunk**, and **Coastal Link** from **Synthetic Exercise World - Telecommunications**. Use global attachment scope for all four clusters so the context travels with the approved event. Verify the four attachments before preparing the brief.

3.3 2. Share a decision with the indicators

In **Reports**, add **NACRE-02 · Partner protection brief** with **Inherit event**. Reference each saved object using the editor's object control or `@[object](UUID)`. Record the reason, scope, and expiry of each proposed decision.

- **URL01.** Corridor Exchange stages a simulated deny for the exact recorded URL until **10:15 UTC**. The host relation supports review and the ordinary status path stays available.
- **FLOW01.** Tidegrid Fiber stages alert-only monitoring for the observed destination IP, destination port, and TCP **together**. The evidence supports a lead. Review it at **09:50 UTC**.

A full MISP JSON event carries object membership and named relations. For the exercise, review that representation in the receiving MISP or export it with the event's MISP JSON download. Use all three fields for a flow match. A flat list of attributes loses the tuple's AND semantics, and **Publish** distributes intelligence without placing controls on a gateway or router. Warninglists or IDS-only exports may omit these training values. Use the replay and keep the local warninglists in effect. MISP Objects guide

At **09:25 UTC**, review and publish to an approved group containing the **three telecom teams' organisations and their instances**. Scope it to this handover. Set the event and report audience deliberately, and keep any team-only annotation organisation-only. For native sync, use a round-specific approved tag such as `nacre-02:handover="approved"`, allow it in each receiving peer's Pull rules, and block the matching hold tag. Test the rules, run **Pull all** on both partner instances, and verify that an unrelated organisation lacks access. On a single instance, the partners perform those same visibility checks on the shared event. Release pilot and recipient checks

Before opening the replay, each partner confirms the event UUID and creator, all four Galaxy attachments, the brief and both live references, the two objects and five relations, the priority guidance, and the intended audience. Exercise Control logs each confirmation.

3.4 3. Run the replay and handle the correction

Give each partner its rows **R01–R06** from the replay CSV. Start at **09:32 UTC** using the reviewed brief. Filter the CSV by operator. For web rows, compare the exact `url` field with URL01. For flow rows, compare `destination_ip`, `destination_port`, and `protocol` with all three FLOW01 relations. Record the action, the object UUID that justified it, and the time. In the replay, **deny** and **alert** are decisions recorded on paper or in your offline test harness. **Allow** means the exercise control takes no action on that row.

At **09:50 UTC**, Control releases a correction to the **DeltaReach** author. Approved maintenance telemetry accounts for the observed FLOW01 connection. On the same event, update the brief to **retire the FLOW01 alert guidance**, give the reason and effective time, and keep the source observation for the audit trail. The URL guidance retains its original expiry. Have the DeltaReach reviewer republish the update and both peers confirm receipt of the revised report and the unchanged event UUID. Both teams revise their local exercise actions before opening **R07–R08**.

Replay rows	Facilitator's expected result
R01	Simulated deny for the exact URL.
R02	Allow the status path on the same host.
R03	Alert on the complete TCP tuple during its approved window.
R04–R06	Allow each near match. These differ by port, destination address, and protocol respectively.
R07	Allow the same TCP tuple after the recipients have applied the correction.
R08	Simulated deny for the exact URL while its guidance is still active.

At **10:15 UTC**, expire the URL exercise control, then replay R08 once more using the new time and confirm that it allows. Confirm both transit links stayed available throughout the drill. In the debrief, collect the original event UUID, peer receipt times, the replay results, and proof that both recipients applied the correction. Score full credit when all intended matches, near misses, and retirement checks agree with the expected results.

To adapt the drill to another sector, choose a service from its Galaxy and map. Replace the logs, protected service, and partner audiences together. Keep at least one near-match observation for every proposed protection and a timed correction that requires the recipients to revise an earlier decision.

3.5 Screenshot provenance

The screenshots are unmodified MISP Book captures. The MISP Book contributors license them under CC BY-SA 4.0. IP-port form capture · URL object capture · CC BY-SA 4.0

PART 01

World extensions

CHAPTER 04

Flags of Nacre

Ten original flags identify the ten fictional countries of Nacre. The atlas shows each flag at its country and repeats it in a visual index with the capital.

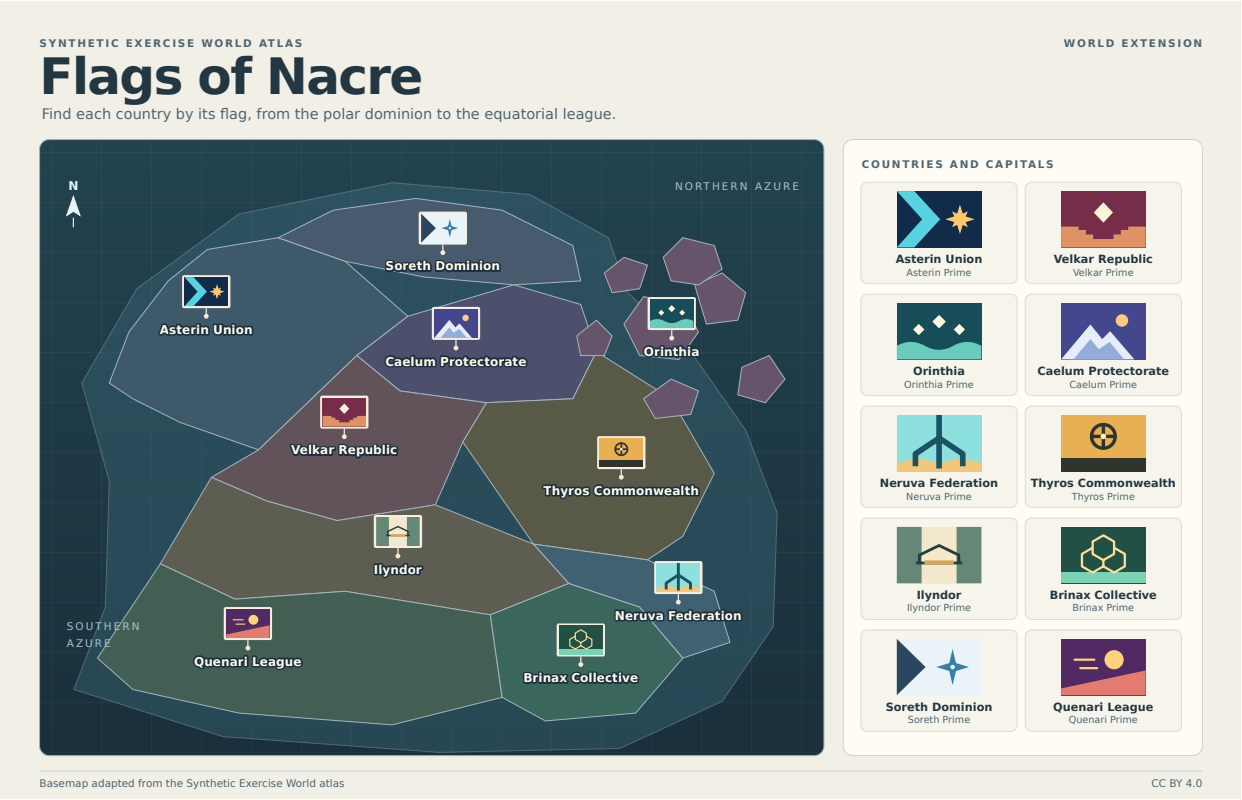
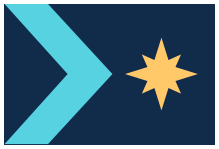
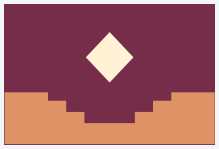
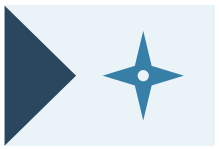
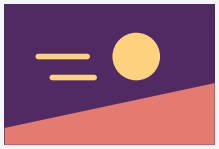


Figure 4.1: Map of Nacre with flags beside the ten countries and a visual index of their flags and capitals

4.1 Flag index

Select a flag to open its standalone 3:2 SVG.

Flag	Country	Capital	Recognition cue
	Asterin Union	Asterin Prime	A cyan chevron and gold eight-point star on midnight blue recall northern skies and the energy network.
	Velkar Republic	Velkar Prime	A copper stepped basin and ivory diamond on burgundy represent the inland basin and its trade.

Flag	Country	Capital	Recognition cue
	Orinthia	Orinthia Prime	Three ivory island diamonds above a sea-green wave represent the archipelago.
	Caelum Protectorate	Caelum Prime	Two pale mountain peaks and an amber sun against indigo evoke the high plateau.
	Neruva Federation	Neruva Prime	A dark river splits into three channels over a turquoise field and sand-colored delta.
	Thyros Commonwealth	Thyros Prime	An ochre field bears a dark four-spoke wheel above a charcoal stripe for inland trade routes.
	Ilyndor	Ilyndor Prime	Two sage fields enclose an ivory corridor and a gold bridge.
	Brinax Collective	Brinax Prime	Three joined hexagonal cells above a mint coastal stripe represent a shared grid and cooperative institutions.
	Soreth Dominion	Soreth Prime	An ice-white field, a navy wedge, and a blue compass rose recall polar navigation.
	Quenari League	Quenari Prime	A gold sun and rising coral band on plum evoke the equatorial growing season.

4.2 Exercise case · Identify the reporting country

Give participants a few status cards labeled only with these flags. Ask them to match each card to a country using the atlas and record the country's name and capital. Use the index to check the answers. For data exchange, match the corresponding country UUID from the Galaxy record.

4.3 MISP Galaxy

Load the base Synthetic Exercise World, then import the Galaxy definition and cluster collection. Use galaxy type `exercise-world-country-flags`. Each `country-flag` cluster uses a `represents` relationship to the existing country UUID. Resolve `meta.flag-path` from the root of the repository at the revision your exercise uses. The canonical country records use the standard `meta.refs` array for published reference URLs.

Country names, capitals, and UUIDs were verified against the original Nacre country records. MISP Galaxy revision `779b780`

The flags and atlas adaptation are licensed under CC BY 4.0. Original atlas · License

CHAPTER 05

Communities of Nacre

This extension introduces six invented ethnic identities and five invented religions for fictional characters. The examples overlap across all ten Nacre countries. Characters can use any of these identities in any country and can choose their ethnic or religious affiliations independently.

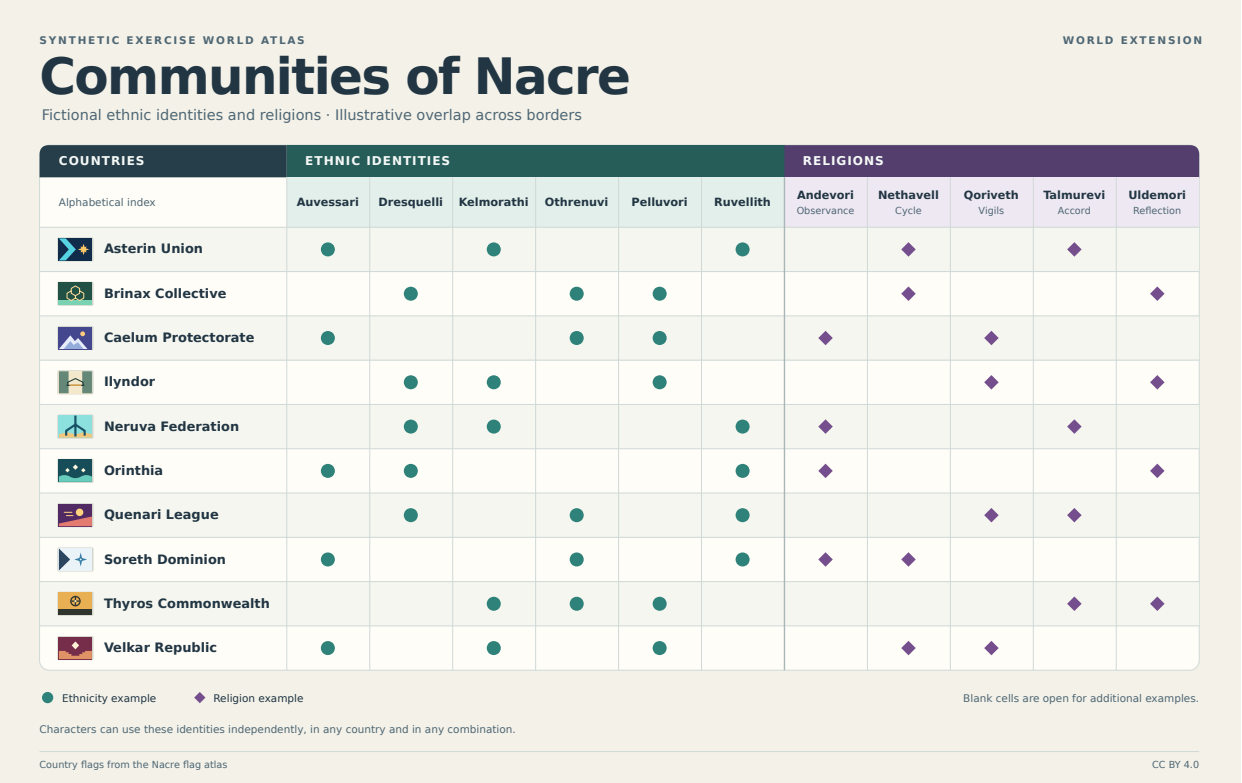


Figure 5.1: Country-by-community index for the six invented ethnic identities and five invented religions of Nacre

Marks in the editable SVG and entries in the table indicate sample associations. Blank cells are open for additional examples. Read the two groups independently when writing a character or an exercise.

5.1 Community examples by country

Country	Ethnic identity examples	Religion examples
Asterin Union	Auvessari, Kelmorathi, Ruvellith	Nethavell Cycle, Talmurevi Accord
Brinax Collective	Dresquelli, Othrenuvi, Pelluvori	Nethavell Cycle, Uldemori Reflection
Caelum Protectorate	Auvessari, Othrenuvi, Pelluvori	Andevori Observance, Qoriveth Vigils
Ilyndor	Dresquelli, Kelmorathi, Pelluvori	Qoriveth Vigils, Uldemori Reflection
Neruva Federation	Dresquelli, Kelmorathi, Ruvellith	Andevori Observance, Talmurevi Accord
Orinthia	Auvessari, Dresquelli, Ruvellith	Andevori Observance, Uldemori Reflection
Quenari League	Dresquelli, Othrenuvi, Ruvellith	Qoriveth Vigils, Talmurevi Accord
Soreth Dominion	Auvessari, Othrenuvi, Ruvellith	Andevori Observance, Nethavell Cycle
Thyros Commonwealth	Kelmorathi, Othrenuvi, Pelluvori	Talmurevi Accord, Uldemori Reflection

Country	Ethnic identity examples	Religion examples
Velkar Republic	Auvessari, Kelmorathi, Pelluvori	Nethavell Cycle, Qoriveth Vigils

5.2 Invented religions

The descriptions provide optional material for scenes or character profiles.

Religion	Example observance
Andevori Observance	An invented religion whose example gatherings include short readings chosen in turn by participants.
Nethavell Cycle	An invented religion with an example calendar of reflection days and community gatherings.
Qoriveth Vigils	An invented religion whose example observances include evening gatherings centered on listening and reflection.
Talmurevi Accord	An invented religion with an example observance of writing and sharing personal reflections.
Uldemori Reflection	An invented religion with an example practice of quiet, self-guided reflection.

5.3 Exercise case · Record a character's chosen affiliations

Prepare an exchange of three fictional oral-history records.

- An Orinthian character identifies as Auvessari and reports the Uldemori Reflection.
- A Soreth character also identifies as Auvessari and reports the Andevori Observance.
- An Asterin character identifies as Kelmorathi and leaves the religion field blank.

Participant task. Record the country UUID for each character and the community UUIDs for the labels each character supplied. Share the sample records with a second team and check that the two Auvessari entries retain their different religious affiliations and that the blank field stays blank.

5.4 MISP Galaxy

Load the base Synthetic Exercise World Galaxy, then import the Galaxy definition and cluster collection. Use the Galaxy type `exercise-world-communities`.

Each cluster uses either `meta.entity-type = ["fictional-ethnicity"]` or `["fictional-religion"]`. Its `represented-in-examples-for` relationships point to existing country UUIDs and are marked `illustrative` in `meta.association-scope`. Use the relevant entity family when looking up a character's chosen label.

Country references match the base Synthetic Exercise World. MISP Galaxy revision `779b780`

The visual index reuses the country flags under CC BY 4.0. Flag atlas · License

CHAPTER 06

Nacre telecommunications

This extension adds one representative telecom operator in each Nacre country. It models fixed broadband, radio access, cross-border fiber, and which operators exchange traffic over each link.

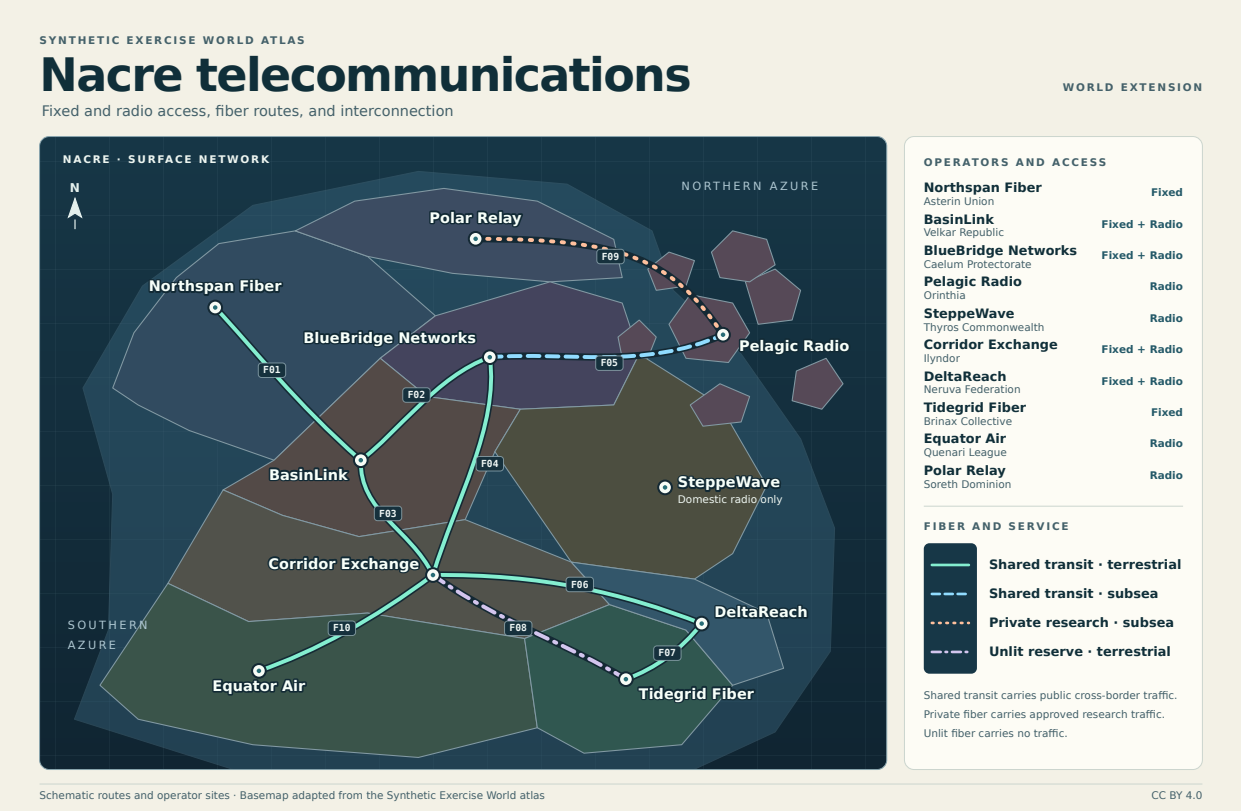


Figure 6.1: Map of Nacre showing ten telecom operators, their access services, and the status of each fiber route

The editable SVG has separate basemap and telecom layers. The overlay shows operator hubs and schematic route paths. Read the operator key for subscriber access and the route labels for interconnection.

6.1 Operators

Country	Operator	Subscriber access	Cross-border service
Asterin Union	Northspan Fiber	Fixed	Shared transit to Velkar via F01
Velkar Republic	BasinLink	Fixed and radio	Shared transit to Asterin, Caelum, and Ilyndor via F01, F02, and F03
Caelum Protectorate	BlueBridge Networks	Fixed and radio	Shared transit to Velkar, Ilyndor, and Orinthia via F02, F04, and F05
Orinthia	Pelagic Radio	Radio	Shared transit to Caelum via F05 and private research traffic to Soreth via F09
Thyros Commonwealth	SteppeWave	Radio	Domestic-only network with local fiber backhaul

Country	Operator	Subscriber access	Cross-border service
Ilyndor	Corridor Exchange	Fixed and radio	Shared transit to Velkar, Caelum, Neruva, and Quenari via F03, F04, F06, and F10
Neruva Federation	DeltaReach	Fixed and radio	Shared transit to Ilyndor and Brinax via F06 and F07
Brinax Collective	Tidegrid Fiber	Fixed	Shared transit to Neruva via F07. Unlit reserve to Ilyndor via F08
Quenari League	Equator Air	Radio	Shared transit to Ilyndor via F10
Soreth Dominion	Polar Relay	Radio	Private research traffic to Orinthia via F09. Domestic subscriber service

Fixed access represents wired broadband. Radio access includes mobile or fixed-wireless service. A radio-only operator can still use fiber to connect towers, its domestic core, and any cross-border partners.

6.2 Fiber and interconnection

Route	Endpoints	Medium	Service
F01 · Iron Basin Trunk	Northspan Fiber ↔ BasinLink	Terrestrial	Shared transit
F02 · Plateau Trunk	BasinLink ↔ BlueBridge Networks	Terrestrial	Shared transit
F03 · Trade Corridor Spur	BasinLink ↔ Corridor Exchange	Terrestrial	Shared transit
F04 · Ridge Bypass	BlueBridge Networks ↔ Corridor Exchange	Terrestrial	Shared transit
F05 · Island Cable	BlueBridge Networks ↔ Pelagic Radio	Subsea	Shared transit
F06 · Delta Trunk	Corridor Exchange ↔ DeltaReach	Terrestrial	Shared transit
F07 · Coastal Link	DeltaReach ↔ Tidegrid Fiber	Terrestrial	Shared transit
F08 · Cooperative Reserve	Corridor Exchange ↔ Tidegrid Fiber	Terrestrial	Unlit reserve
F09 · Polar Research Cable	Pelagic Radio ↔ Polar Relay	Subsea	Private research traffic only
F10 · Orchard Spur	Corridor Exchange ↔ Equator Air	Terrestrial	Shared transit

Shared transit carries public cross-border traffic in both directions for this exercise. Private traffic on F09 stays within the approved research network. F08 carries no traffic until both operators authorize and commission it. Domestic radio coverage can remain available when cross-border transit is lost.

6.3 Exercise case · Two links down

A storm interrupts the Plateau Trunk (F02). Caelum and Velkar are still reachable through Ilyndor over the Ridge Bypass (F04) and Trade Corridor Spur (F03). The exercise assumes both links have enough capacity for priority traffic.

Thirty minutes later, Pelagic Radio reports loss of the Island Cable (F05). Local radio service in Orinthia remains available, and the separate F09 research circuit is still up. Public cross-border traffic and medical services that depend on it lose their mainland connection.

Participant task. Draw the paths that remain available, classify the outage by service, and draft a joint status notice explaining what domestic callers, research users, and mainland partners can still reach. Identify which operators need to coordinate restoration and how they would confirm that public transit has returned.

Facilitator check. The mainland detour uses F03 and F04. Orinthia has no remaining shared-transit path, even though F09 continues to carry private research traffic. F08 can only add an Ilyndor–Brinax path after

commissioning, so it cannot restore Orinthia. SteppeWave's domestic service is outside the affected transit network.

For an indicator-sharing drill on the same network, follow NACRE-02 · Telecom defence.

6.4 MISP Galaxy

Load the base Synthetic Exercise World galaxy and cluster collection first, then import the extension's Galaxy definition and cluster collection. Use the galaxy type `exercise-world-telecom`.

Operators link to their base country UUIDs with `operates-in`. The BlueBridge Networks operator record also links to the existing company with `models-role-of`. Each fiber route links to its two operators with `terminated-by`, and operators link back with `terminates`. These associations describe physical endpoints. Use `meta.service-state` on fiber records to build a traffic graph. For shared transit, only include `shared-transit` routes. Operators describe subscriber access in `meta.access-networks`.

The country and company UUIDs were verified against MISP Galaxy revision `779b780`.

The map uses recolored country outlines from the Synthetic Exercise World atlas and adds the telecom overlay. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 07

Nacre satellite communications

This extension adds three satellite services linked to existing operators in the telecommunications extension. It models a fixed GEO relay for VSAT terminals, tracked MEO backhaul, and a meshed LEO network with two terrestrial gateways.

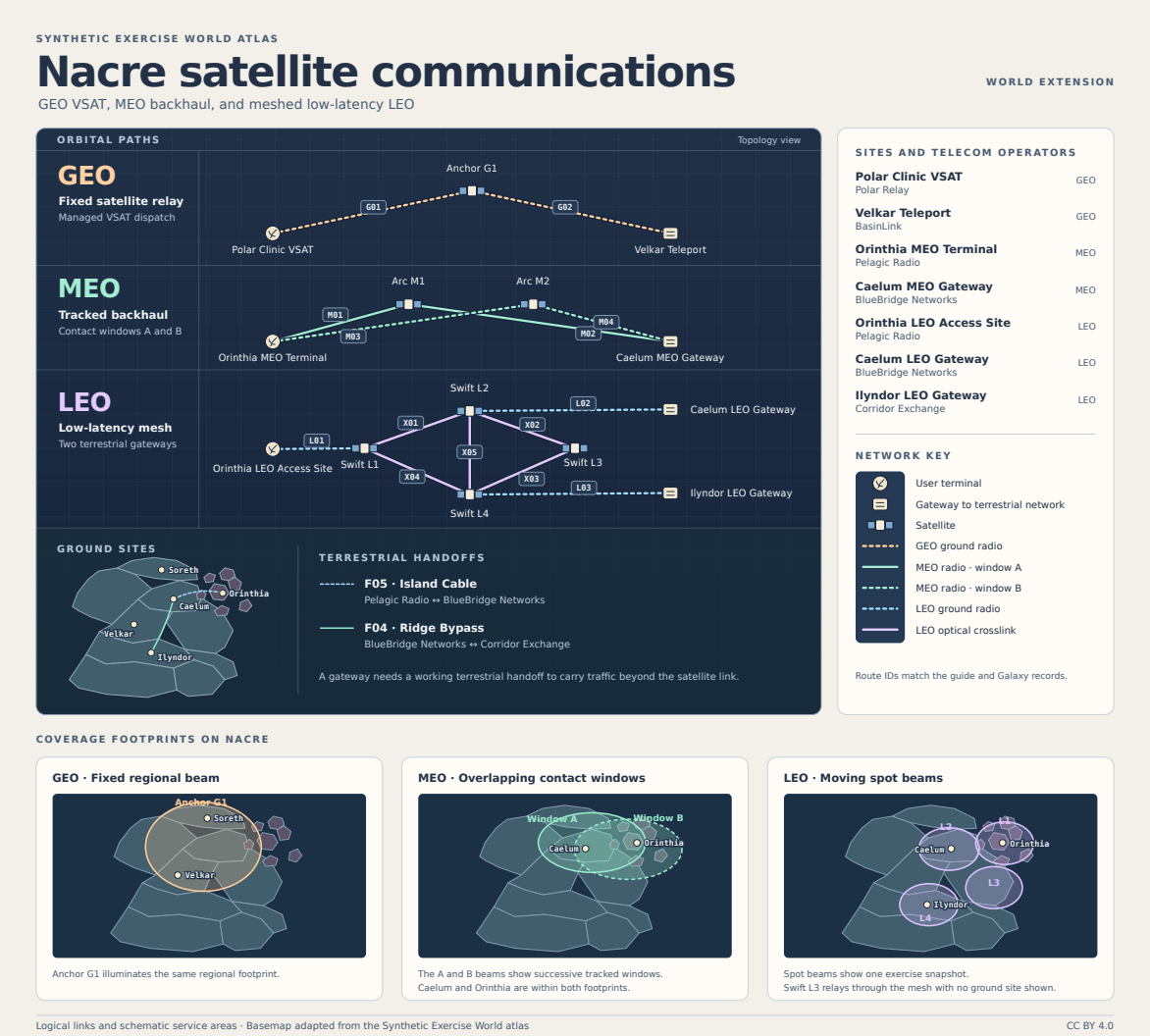


Figure 7.1: Topology of Nacre's GEO VSAT, MEO backhaul, and LEO mesh services, with ground sites, telecom handoffs, and coverage footprints

The editable SVG separates the three orbital networks, coverage footprints, and ground inset into layers. The orbital view shows logical connectivity. The ground inset shows representative site locations and two relevant fiber routes.

7.1 Services

Service	Orbit and topology	Traffic carried in the exercise
Anchor GEO VSAT	Geostationary relay. Anchor G1 appears fixed above Nacre, and the very small aperture terminal (VSAT) uses a fixed dish.	Managed dispatch from Polar Clinic to Velkar Teleport.

Service	Orbit and topology	Traffic carried in the exercise
Arc MEO Backhaul	Medium Earth orbit relays. The ground sites track Arc M1 in contact window A and Arc M2 in window B. Each window needs both radio legs through the same relay.	Managed medical backhaul between Orinthia and Caelum.
Swift LEO Mesh	Low Earth orbit. Four satellites form a mesh with five optical crosslinks and feeder links to two terrestrial gateways.	Priority shared transit for Pelagic Radio, including interactive services.

GEO has the longest propagation path of these modeled services. MEO reduces propagation delay on comparable paths, while LEO combines shorter radio legs with routing between satellites. End-to-end latency depends on the selected path, the gateway handoff, and how much traffic the network is carrying.

7.2 Coverage footprints

Orbit	Footprint	Ground sites in view
GEO	Anchor G1 has a fixed regional beam.	Polar Clinic VSAT and Velkar Teleport.
MEO	Arc M1 and M2 have moving regional beams, drawn for contact windows A and B.	The Orinthia terminal and Caelum gateway lie in both illustrated footprints.
LEO	Each Swift satellite has a smaller moving spot beam, drawn for one exercise snapshot.	L1 covers the Orinthia access site, L2 covers the Caelum gateway, and L4 covers the Ilyndor gateway. L3 is a relay in this snapshot.

The footprints are schematic. Coverage describes where a site lies under an illustrated beam. Service also depends on the active radio links, the terrestrial handoff, and the traffic policy.

7.3 Ground sites and telecom partners

Ground site	Country	Role	Telecom operator
Polar Clinic VSAT	Soreth Dominion	GEO user terminal	Polar Relay
Velkar Teleport	Velkar Republic	GEO gateway	BasinLink
Orinthia MEO Terminal	Orinthia	MEO user terminal	Pelagic Radio
Caelum MEO Gateway	Caelum Protectorate	MEO gateway	BlueBridge Networks
Orinthia LEO Access Site	Orinthia	LEO user terminal	Pelagic Radio
Caelum LEO Gateway	Caelum Protectorate	LEO gateway	BlueBridge Networks
Ilyndor LEO Gateway	Ilyndor	LEO gateway	Corridor Exchange

Gateways hand satellite traffic to the attached operator within the service's traffic policy. The Island Cable (F05) is Pelagic Radio's usual shared-transit link to BlueBridge. The Ridge Bypass (F04) connects BlueBridge and Corridor Exchange through the terrestrial network. GEO clinic dispatch and MEO medical backhaul use managed services. Swift LEO provides the modeled shared-transit fallback for priority traffic.

7.4 Satellite links

ID	Endpoints	Link
G01	Polar Clinic VSAT ↔ Anchor G1	GEO ground radio
G02	Anchor G1 ↔ Velkar Teleport	GEO ground radio
M01	Orinthia MEO Terminal ↔ Arc M1	MEO ground radio · window A
M02	Arc M1 ↔ Caelum MEO Gateway	MEO ground radio · window A
M03	Orinthia MEO Terminal ↔ Arc M2	MEO ground radio · window B

ID	Endpoints	Link
M04	Arc M2 ↔ Caelum MEO Gateway	MEO ground radio · window B
L01	Orinthia LEO Access Site ↔ Swift L1	LEO ground radio
L02	Swift L2 ↔ Caelum LEO Gateway	LEO ground radio
L03	Swift L4 ↔ Ilyndor LEO Gateway	LEO ground radio
X01	Swift L1 ↔ Swift L2	Optical crosslink
X02	Swift L2 ↔ Swift L3	Optical crosslink
X03	Swift L3 ↔ Swift L4	Optical crosslink
X04	Swift L4 ↔ Swift L1	Optical crosslink
X05	Swift L2 ↔ Swift L4	Optical crosslink

Treat each link as bidirectional within the stated contact window or exercise snapshot. For the MEO handover, switch from the complete window A path to the complete window B path. For LEO, the crosslink table describes a single representative network state.

7.5 Exercise case · Orinthia loses its island cable

A storm hits Orinthia. Pelagic Radio retains local radio coverage and needs to maintain priority shared transit and managed medical traffic. Both LEO gateways are initially available, and the first MEO contact is window A.

Inject	Change
1 · Island Cable outage	F05 is unavailable. The MEO service moves from window A to window B during the exercise.
2 · Caelum gateway outage	A local power problem takes both Caelum satellite gateways offline. BlueBridge's terrestrial core and F04 remain available. LEO crosslink X04 is also unavailable in the current snapshot.

Participant task. Trace a permitted path for each traffic class after each inject. Identify the satellites, active links, and terrestrial handoff, then draft a joint service update for Pelagic Radio, BlueBridge Networks, and Corridor Exchange.

Facilitator check. After inject 1, Swift can reach BlueBridge through L01, X01, and L02. Arc still carries managed medical traffic via M01 and M02 during window A and M03 and M04 during window B. After inject 2, Arc loses its only gateway. Swift can still use L01, X01, X05, and L03 to reach Corridor Exchange through Swift L2 and Swift L4. Swift L2 continues to relay even though its Caelum feeder is unavailable. Corridor Exchange can reach BlueBridge's terrestrial core via F04. Soreth's GEO VSAT remains available for its clinic dispatch service.

7.6 MISP Galaxy

Load the base Synthetic Exercise World and the telecommunications Galaxy files, then import the satellite communications Galaxy definition and cluster collection. Use galaxy type `exercise-world-satellite-communications`.

meta.entity.type	Metadata and relationships
satellite-service	`orbit-class`, `topology`, and `traffic-class` describe the service. `uses-satellite`, `uses-site`, and `uses-link` associate its components. Arc and Swift link to F05 with `provides-fallback-for`.
satellite	`orbit-class` identifies GEO, MEO, or LEO. `footprint-kind` describes the beam, and `footprint-window` marks the illustrated MEO window. `covers-site` links to sites within that footprint. Each satellite `terminates` its active or modeled links.

meta.entity type	Metadata and relationships
satellite-ground-site	`ground-role` identifies a user terminal or gateway. `located-in` references the base country and `hands-off-to` references the telecom operator.
satellite-link	`route-id` matches the map. `link-kind` distinguishes radio and optical links, and MEO links carry a `contact-window`. Each link is `terminated-by` two endpoints.

Operator and Island Cable UUIDs come from the telecom cluster collection. Country UUIDs come from MISP Galaxy revision `779b780`.

The ground inset uses recolored country outlines from the Synthetic Exercise World atlas. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 08

Waymark satellite navigation

Waymark is a fictional, GPS-like positioning, navigation, and timing (PNT) service for Nacre. Satellites in medium orbit broadcast navigation and time signals one way. Ground receivers use several broadcasts to estimate position and time, and reference monitors publish local reception and integrity observations.

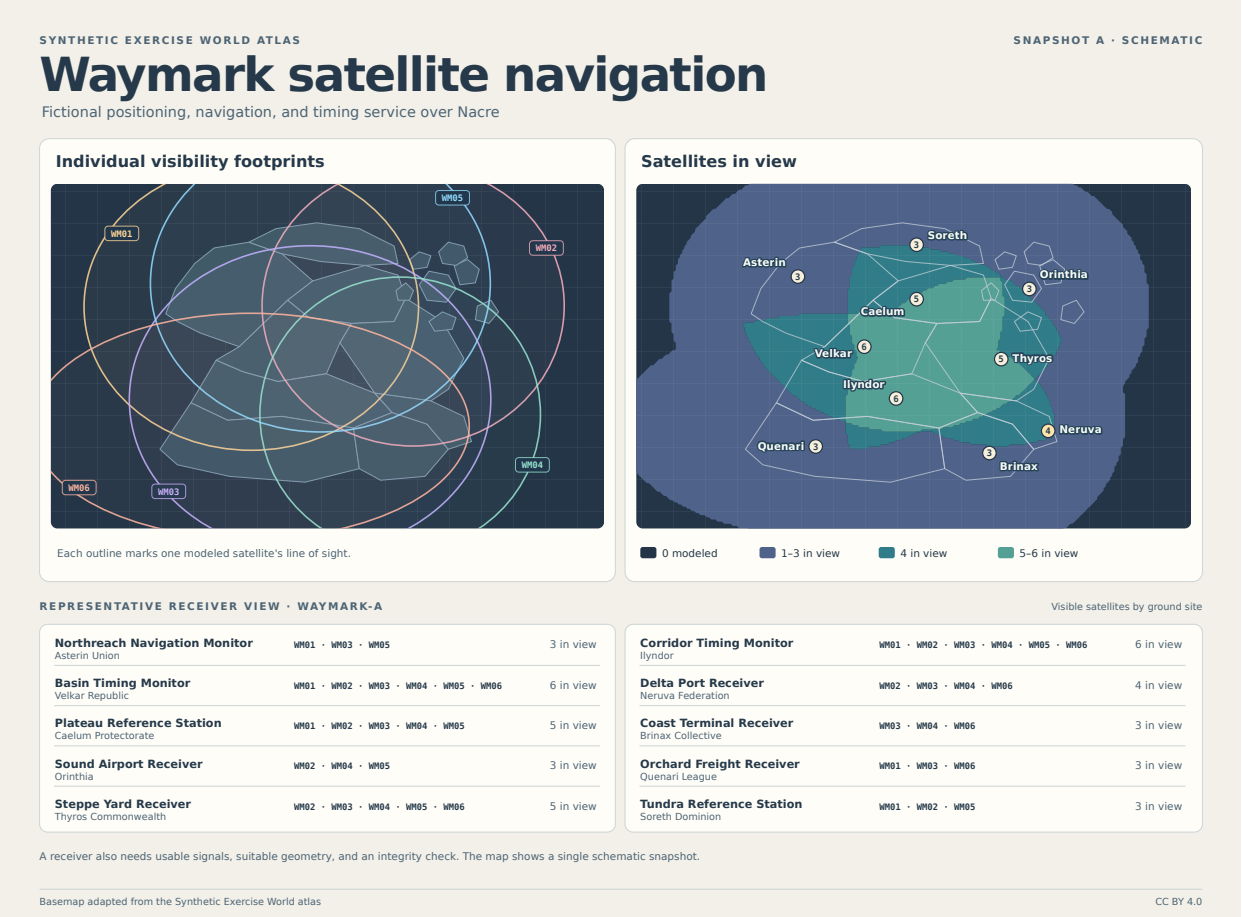


Figure 8.1: Two maps showing six Waymark satellite footprints and their overlap over Nacre, with satellite lists for ten ground sites

8.1 Footprints and coverage

The editable SVG shows six individual visibility outlines and a shaded map of their overlap. The directory gives the exact satellite IDs in view at each example site in snapshot `WAYMARK-A`. The footprints are schematic. Visibility changes with time, receiver location, and local obstructions.

A standalone 3D fix generally needs at least four independent satellite observations to solve for position and receiver clock offset. Signal quality, satellite geometry, and integrity checks still govern which fixes a receiver can trust. Timing-only services can have different acceptance criteria. In the exercise, track baseline visibility, usable observations, position availability, and timing quality separately.

Ground site	Country	Existing facility or operator	Satellites in view
Northreach Navigation Monitor	Asterin Union	Northreach Airport	WM01, WM03, WM05

Ground site	Country	Existing facility or operator	Satellites in view
Basin Timing Monitor	Velkar Republic	BasinLink	WM01, WM02, WM03, WM04, WM05, WM06
Plateau Reference Station	Caelum Protectorate	Plateau Airport	WM01, WM02, WM03, WM04, WM05
Sound Airport Receiver	Orinthia	Sound Airport	WM02, WM04, WM05
Steppe Yard Receiver	Thyros Commonwealth	Steppe Yard	WM02, WM03, WM04, WM05, WM06
Corridor Timing Monitor	Ilyndor	Corridor Exchange	WM01, WM02, WM03, WM04, WM05, WM06
Delta Port Receiver	Neruva Federation	Delta Port	WM02, WM03, WM04, WM06
Coast Terminal Receiver	Brinax Collective	Coast Terminal	WM03, WM04, WM06
Orchard Freight Receiver	Quenari League	Orchard Market Terminal	WM01, WM03, WM06
Tundra Reference Station	Soreth Dominion	Tundra Airfield	WM01, WM02, WM05

8.2 Exercise case · Suspected jamming at Delta Port

Before the exercise, identify the services that depend on Waymark, confirm their independent fallback sources, and agree on the criteria for returning to normal service.

Delta Port starts in the coverage snapshot with WM02, WM03, WM04, and WM06 in view and a valid position fix. During the incident, two local receivers report degraded signal quality and an interference alert. Only WM02 and WM04 remain usable. The position fix becomes unavailable, and the port clock enters holdover on its local oscillator. The Plateau Reference Station and Corridor Timing Monitor both report normal reception against their own baselines.

Participant task. Compare local and regional observations, declare which port services have lost trusted PNT, and coordinate a service update with port operations. Use the port's established independent position checks and approved fallback procedures. Track the start of timing holdover and which systems depend on the port clock. Agree on the evidence needed before returning to normal service.

Facilitator check. Four satellites remain in the modeled footprint, and two usable observations leave the affected receivers without a new standalone 3D fix. Local interference is consistent with the observations. Record it as suspected until confirmed. Preserve receiver alerts and quality logs and check timing against a separate reference. Holdover can support timing while it remains within the service's approved error budget. Before restoring normal operation, verify a stable position against an independent reference and confirm timing and integrity status.

8.3 MISP Galaxy

Load the base Synthetic Exercise World and the civil aviation, transport, and telecom Galaxy files. Import the satellite navigation Galaxy definition and cluster collection for galaxy type `exercise-world-satellite-navigation`.

meta.entity-type	Meaning and relationships
`satellite-navigation-service`	Waymark's one-way broadcast service. `uses-satellite` identifies its space segment, and `monitored-by` identifies reference monitors.
`navigation-coverage-snapshot`	The model state for the coverage map. `models-service`, `includes-satellite`, and `samples-site` identify what it includes.

meta.entity-type	Meaning and relationships
navigation-satellite	satellite-id matches an outline on the map. visible-at links to the sites within that footprint.
navigation-ground-site	located-in links to a country, associated-with links to an existing host, and sees-in-snapshot records baseline visibility.
navigation-interference-exercise	observed-at and compares-with identify the affected site and reference monitors. usable-satellite-ids, position-state, and timing-state describe the incident.

Use the shared snapshot-id when comparing coverage and exercise observations. Country references use the existing Nacre UUIDs. MISP Galaxy revision 779b780

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CHAPTER 09

Nacre electricity

This extension follows electricity from renewable, nuclear, and fossil generation through the transmission grid to local distribution. Each Nacre country has a representative generation site, a grid hub, and a distribution area serving example loads.

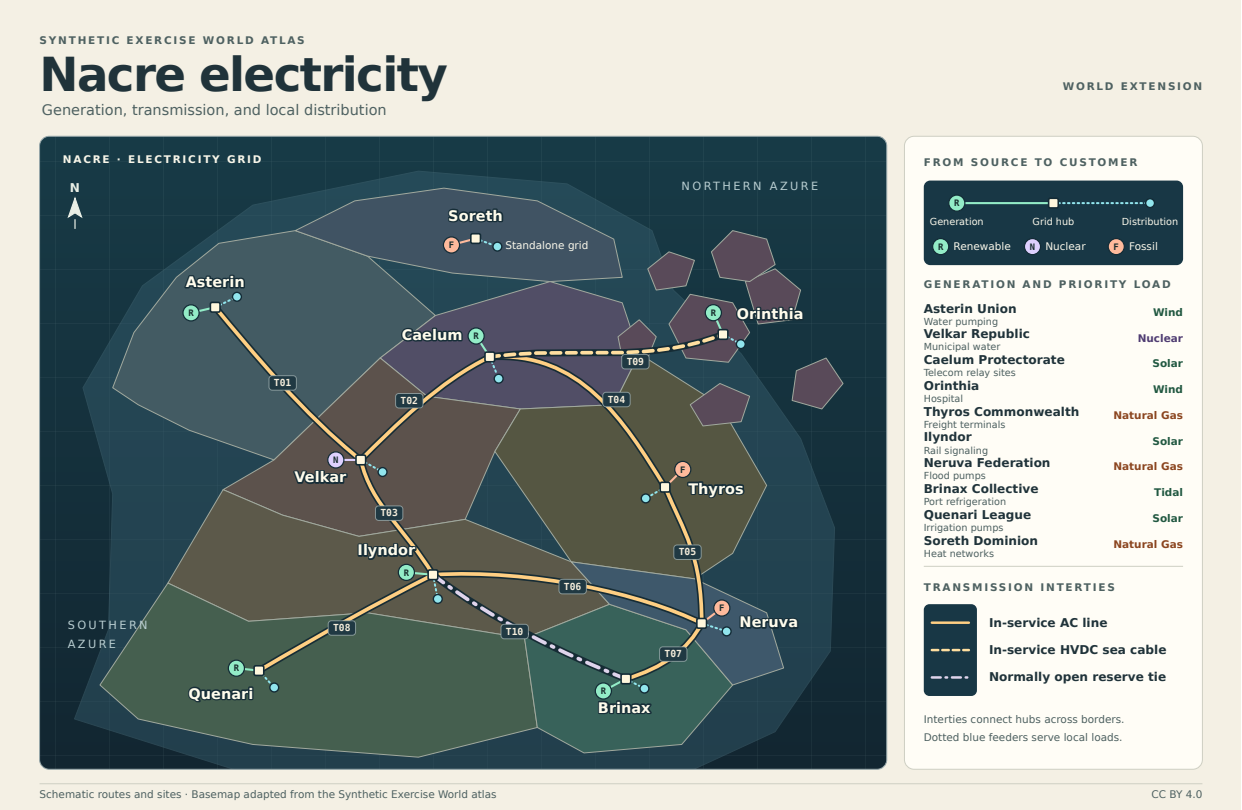

Figure 9.1: Map of Nacre showing renewable, nuclear, and fossil generators, grid hubs, transmission interties, and local distribution feeders

The SVG has editable layers for the basemap, transmission interties, and local systems. A lettered circle identifies the generation class, a square marks the grid hub, and a dotted blue feeder leads to local distribution. Sites, feeders, and routes are schematic.

9.1 Generation and distribution

Country	Generator	Source	Example priority loads on local distribution
Asterin Union	Northwind Farms	Renewable · wind	Water pumping, district heating
Velkar Republic	Basin Nuclear Station	Nuclear	Municipal water, heating plants
Caelum Protectorate	Plateau Solar Fields	Renewable · solar	Telecom relay sites, water treatment
Orinthia	East Isles Wind	Renewable · wind	Hospital, water pumps, island telecom core
Thyros Commonwealth	Steppe Gas Station	Fossil · natural gas	Freight terminals, water pumping

Country	Generator	Source	Example priority loads on local distribution
Ilyndor	Corridor Solar Fields	Renewable · solar	Rail signaling, public service buildings
Neruva Federation	Delta Gas Station	Fossil · natural gas	Flood pumps, port controls
Brinax Collective	Tidegate Array	Renewable · tidal	Port refrigeration, cooperative dispatch center
Quenari League	Equator Solar Fields	Renewable · solar	Irrigation pumps, food storage
Soreth Dominion	Polar Gas Station	Fossil · natural gas	Heat networks, cold-chain depots

Grid hubs connect local generation and interties to distribution. Each distribution area represents a group of feeders that serve households, businesses, and priority services.

9.2 Transmission grid

Intertie	Grid hubs	Technology and medium	Baseline status
T01 · North Basin Line	Asterin ↔ Velkar	Terrestrial AC	In service
T02 · Plateau Line	Velkar ↔ Caelum	Terrestrial AC	In service
T03 · Trade Corridor Line	Velkar ↔ Ilyndor	Terrestrial AC	In service
T04 · Steppe Exchange	Caelum ↔ Thyros	Terrestrial AC	In service
T05 · Delta–Steppe Line	Thyros ↔ Neruva	Terrestrial AC	In service
T06 · Delta Trunk	Ilyndor ↔ Neruva	Terrestrial AC	In service
T07 · Coastal Tie	Neruva ↔ Brinax	Terrestrial AC	In service
T08 · Equator Spur	Ilyndor ↔ Quenari	Terrestrial AC	In service
T09 · Archipelago Cable	Caelum ↔ Orinthia	Subsea high-voltage direct current (HVDC)	In service
T10 · Cooperative Reserve Tie	Ilyndor ↔ Brinax	Terrestrial AC	Normally open

Eight mainland areas share the AC grid. Orinthia exchanges power over the Archipelago Cable, its sole intertie. Soreth operates a standalone grid. The Cooperative Reserve Tie is open in the baseline. The intertie table describes connectivity. The exercise supplies the island's available power and demand separately.

9.3 Exercise case · An island runs short

Orinthia starts with a 40 MW load and two sources of supply. East Isles Wind provides 24 MW, and the Archipelago Cable imports 16 MW. Priority loads total 18 MW across the hospital, water pumps, and island telecom core. Other loads total 22 MW.

Inject	Change
1 · Cable outage	A storm takes the Archipelago Cable (T09) out of service. The island continues operating with its available 24 MW of wind generation.
2 · Wind drops	While the cable is unavailable, wind output falls to 16 MW.

Assume stable island operation for the tabletop. The balances use the stated loads and available supply and ignore electrical losses and ramping.

Participant task. Identify which grid areas are still connected. After each inject, calculate how much demand the island can serve and agree which services to prioritize. Draft a joint update for distributors and service operators, including when each should activate its continuity plans.

Facilitator check. After inject 1, 24 MW covers the 18 MW of priority load and 6 MW of other demand. The island must defer 16 MW. After inject 2, the island must defer 24 MW in total and is 2 MW short even before serving other demand. Mainland generation remains on the other side of T09, and the reserve tie connects

two mainland hubs. Participants should explain which priority services need contingency arrangements while the island waits for imports or wind output to recover.

9.4 MISP Galaxy

Load the base Synthetic Exercise World galaxy and cluster collection first, then import the electricity Galaxy definition and cluster collection. Use the galaxy type `exercise-world-electricity`.

The collection contains four entity families.

meta.entity.type	Metadata and relationships
generation-source	`source-class` identifies renewable, nuclear, or fossil generation, and `technology` identifies the specific source. Each generator `supplies` its hub.
grid-hub	`grid-mode` identifies interconnected or standalone operation. Each hub is `located-in` a base country by UUID, `receives-from` its generator, `supplies` its distribution area, and `terminates` its interties.
distribution-area	`priority-loads` lists representative services. Each area `receives-from` its hub.
transmission-intertie	`route-id` ties the record to the map. `technology` and `line-medium` describe the link, and `grid-state` identifies whether it is in service or normally open. Each intertie is `terminated-by` two hubs.

To reconstruct baseline connectivity, join each intertie to its two hub UUIDs and include only records with `meta.grid-state` set to `in-service`.

The country UUIDs were verified against MISP Galaxy revision `779b780`.

The map uses recolored country outlines from the Synthetic Exercise World atlas and adds the electricity layers. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 10

Nacre oil production and refining

This extension follows crude oil from onshore and offshore production through terminals and refineries to refined fuel deliveries. It covers all ten countries, with different roles in the modeled petroleum network, and links to the electricity extension.

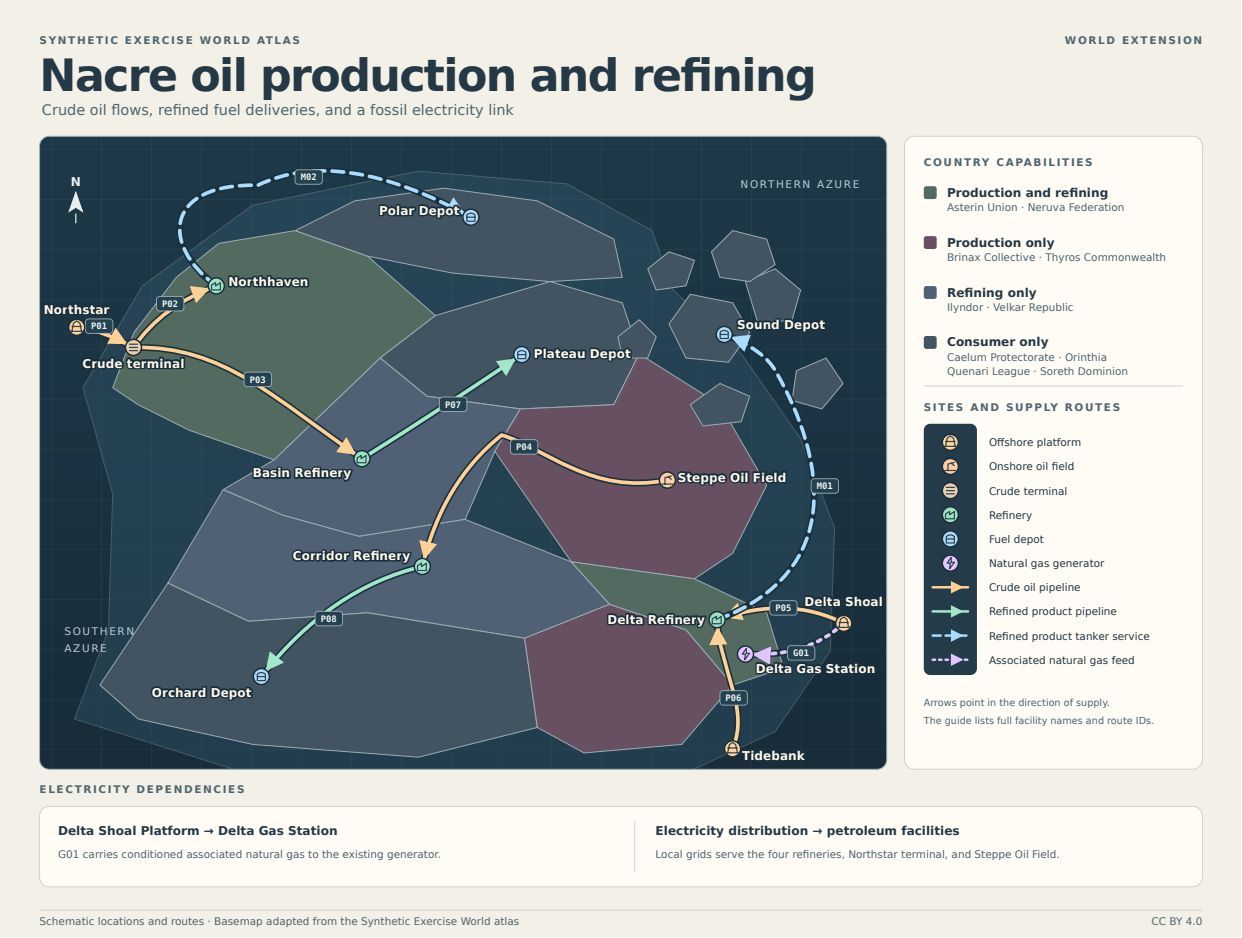

Figure 10.1: Map of Nacre petroleum capabilities, offshore platforms, pipelines, refineries, refined fuel depots, and an associated gas link to electricity generation

The editable SVG separates country capabilities, sites, routes, and electrical dependencies. Arrows show the modeled direction of supply. Locations and routes are schematic.

10.1 Country capabilities

Capability	Countries	Function in the modeled network
Production and refining	Asterin Union, Neruva Federation	Offshore crude production and domestic refinery capacity
Production only	Brinax Collective, Thyros Commonwealth	Crude production and exports to another country's refinery
Refining only	Ilyndor, Velkar Republic	Refining imported crude

Capability	Countries	Function in the modeled network
Consumer only	Caelum Protectorate, Orinthia, Quenari League, Soreth Dominion	Receives refined diesel at a depot

10.2 Supply sites

Site	Country	Modeled function
Northstar Shelf Platform	Asterin Union	Offshore crude production
Northstar Crude Terminal	Asterin Union	Crude landing and onward distribution
Northhaven Refinery	Asterin Union	Refines crude and supplies diesel
Basin Refinery	Velkar Republic	Refines crude and supplies diesel
Steppe Oil Field	Thyros Commonwealth	Onshore crude production
Corridor Refinery	Ilyndor	Refines crude and supplies diesel
Delta Shoal Platform	Neruva Federation	Offshore crude and associated natural gas production
Tidebank Platform	Brinax Collective	Offshore crude production
Delta Refinery	Neruva Federation	Refines crude and supplies diesel
Plateau Fuel Depot	Caelum Protectorate	Receives refined diesel
Sound Fuel Depot	Orinthia	Receives refined diesel
Orchard Fuel Depot	Quenari League	Receives refined diesel
Polar Stores Depot	Soreth Dominion	Receives refined diesel

10.3 Pipelines and tanker routes

Crude reaches the refineries by pipeline. The refined diesel routes include pipelines and coastal tanker services. Tanker routes represent end-to-end deliveries with local terminal handoffs.

Route	Supply direction	Commodity	Transport
P01 · Northstar Landing Line	Northstar Shelf Platform → Northstar Crude Terminal	Crude oil	Pipeline
P02 · Northhaven Feed Line	Northstar Crude Terminal → Northhaven Refinery	Crude oil	Pipeline
P03 · Basin Crude Line	Northstar Crude Terminal → Basin Refinery	Crude oil	Pipeline
P04 · Steppe–Corridor Crude Line	Steppe Oil Field → Corridor Refinery	Crude oil	Pipeline
P05 · Delta Shoal Crude Line	Delta Shoal Platform → Delta Refinery	Crude oil	Pipeline
P06 · Tidebank Crude Line	Tidebank Platform → Delta Refinery	Crude oil	Pipeline
P07 · Plateau Product Line	Basin Refinery → Plateau Fuel Depot	Diesel	Pipeline
P08 · Orchard Product Line	Corridor Refinery → Orchard Fuel Depot	Diesel	Pipeline
M01 · Sound Product Tanker Route	Delta Refinery → Sound Fuel Depot	Diesel	Tanker service
M02 · Polar Product Tanker Route	Northhaven Refinery → Polar Stores Depot	Diesel	Tanker service
G01 · Delta Associated Gas Feed	Delta Shoal Platform → Delta Gas Station	Conditioned natural gas	Gas feed

10.4 Links to the electricity grid

G01 represents delivery of conditioned associated natural gas from Delta Shoal Platform to the existing **Delta Gas Station**. The gas feed includes the conditioning handoff. The generator's electricity record identifies natural gas as its fuel.

The four refineries, Northstar Crude Terminal, and Steppe Oil Field draw electricity from their local distribution areas. The electricity Galaxy identifies the grid hub behind each of those areas.

10.5 Exercise case · Offshore supply interruption

A storm pauses production at Delta Shoal Platform. The Delta Refinery loses its P05 crude deliveries and Delta Gas Station loses the G01 associated gas feed. Tidebank Platform and P06 remain available, and the local electricity distribution area continues supplying the refinery.

Delta Refinery has 18 units of finished diesel cleared for dispatch in the exercise window, including stock. Neruva needs ten units for priority local services. Sound Fuel Depot has requested 12 units, and the M01 tanker has room for all 12. Use the units as a tabletop allocation measure.

Participant task. Trace the refinery's remaining crude route, allocate the available diesel, and draft separate updates for the two fuel customers and the electricity operator. Identify which teams confirm crude intake, product stock, and generation availability.

Facilitator check. Tidebank can still supply crude through P06. Allocate ten diesel units to Neruva and eight to the Sound tanker, leaving a four-unit shortfall at Sound. The electricity operator must confirm what other natural gas is available to Delta Gas Station and report the resulting generation status. Base the dispatch plan on the stated finished stock and confirmed electricity supply.

10.6 MISP Galaxy

Load the base world and the electricity Galaxy files. Then import the Galaxy definition and cluster collection. Use galaxy type `exercise-world-oil-refining`.

meta.entity.type	Relationships and fields
`petroleum-country-profile`	`petroleum-profiles-country` identifies the original country by UUID, `includes-site` identifies its modeled sites, and `supply-role` describes its capability.
`petroleum-site`	`petroleum-site-kind` distinguishes platforms, fields, terminals, refineries, and depots. `sends-via` and `receives-via` identify supply routes. `draws-power-from` points to an electricity distribution area by UUID.
`petroleum-supply-route`	`petroleum-route-id` matches the map, and `commodity` and `transport-mode` describe what moves. `originates-at` and `delivers-to` give the direction. G01 uses `supplies-fuel-to` to reference the fossil generator in the electricity Galaxy.

Country references use existing Nacre UUIDs. MISP Galaxy revision `779b780`

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CHAPTER 11

Nacre water supply

This extension models six representative districts in Caelum, Ilyndor, Neruva, Brinax, Orinthia, and Quenari. It follows water from raw sources through treatment into local distribution and shows three cross-border transfers of treated water. Each treatment plant links to the electricity extension.

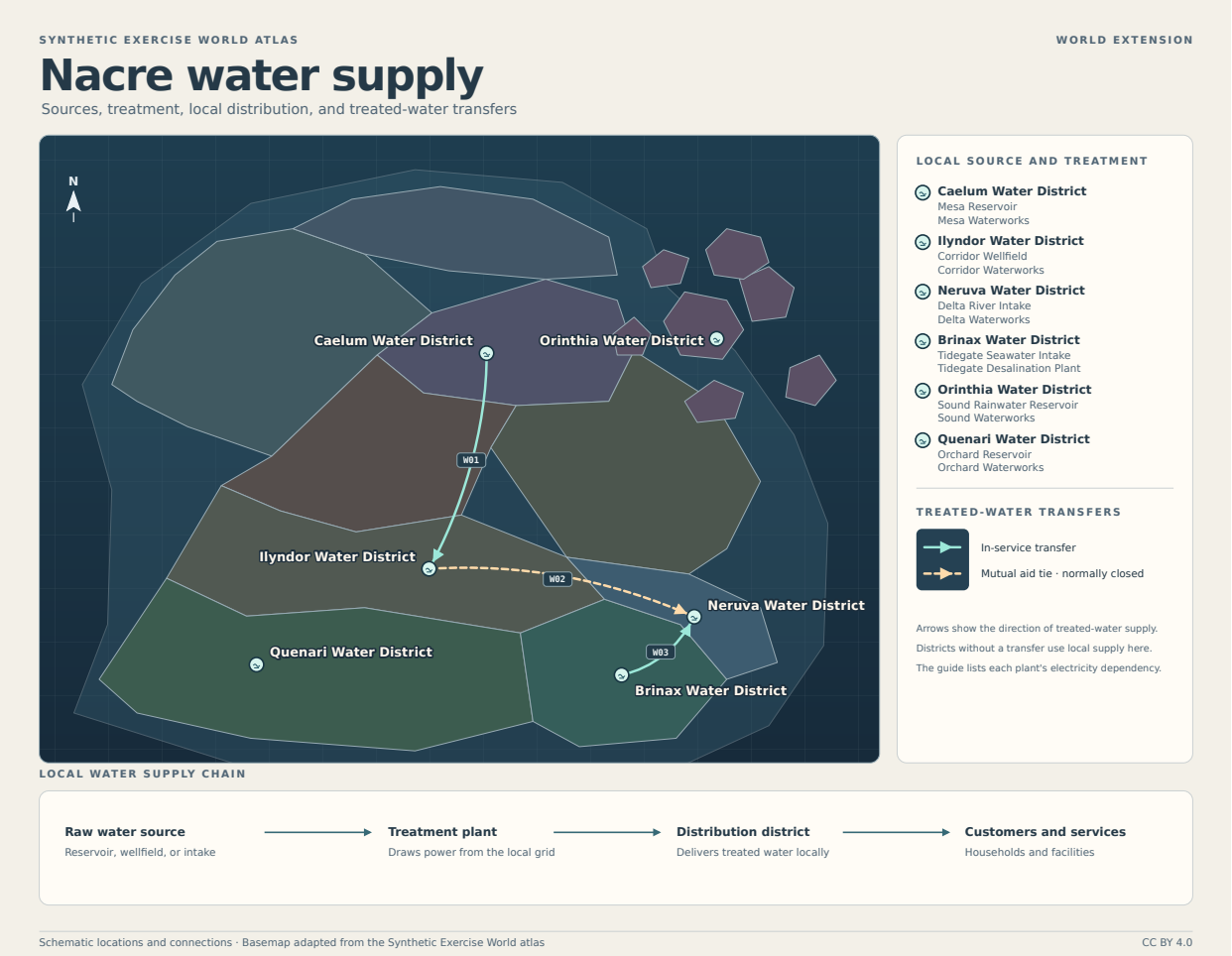

Figure 11.1: Map of six Nacre water districts and the direction of three treated-water transfers, with local sources and treatment plants

The editable SVG separates the basemap, water districts, transfers, and local supply chain. District markers represent the local supply system. Site locations and routes are schematic.

11.1 Local supply chains

Country	Raw source	Treatment plant	Local distribution	Electricity supply
Caelum Protectorate	Mesa Reservoir	Mesa Waterworks	Caelum Water District	Caelum Distribution Area
Ilyndor	Corridor Wellfield	Corridor Waterworks	Ilyndor Water District	Ilyndor Distribution Area
Neruva Federation	Delta River Intake	Delta Waterworks	Neruva Water District	Neruva Distribution Area

Country	Raw source	Treatment plant	Local distribution	Electricity supply
Brinax Collective	Tidegate Seawater Intake	Tidegate Desalination Plant	Brinax Water District	Brinax Distribution Area
Orinthia	Sound Rainwater Reservoir	Sound Waterworks	Orinthia Water District	Orinthia Distribution Area
Quenari League	Orchard Reservoir	Orchard Waterworks	Quenari Water District	Quenari Distribution Area

Plants treat raw water before it reaches the district mains. Each district represents local distribution to residents, businesses, and public services. Orinthia and Quenari use local supply in the modeled network.

11.2 Treated-water transfers

Transfer	Direction	Baseline
W01 · Plateau Treated-Water Main	Caelum → Ilyndor	In service
W02 · Delta Mutual Aid Tie	Ilyndor → Neruva	Normally closed
W03 · Coastal Treated-Water Main	Brinax → Neruva	In service

The arrows show the modeled direction of treated-water supply. A normally closed tie carries water after the participating utilities authorize the transfer and confirm that both systems can receive or deliver the agreed supply.

11.3 Exercise case · Delta Waterworks loses power

An interruption on the local feeder stops treatment at Delta Waterworks. Neruva's district mains and transfer connections remain available. The Brinax utility can send 26 units of treated water over W03 during the exercise window. Ilyndor offers another 14 units over W02, subject to joint approval and quality confirmation. These offers account for each supplying district's own needs.

Neruva has 36 units of priority demand and normally uses 80 units during the same window. Use the units as a tabletop allocation measure.

Participant task. Trace the available supply and calculate the priority shortfall before W02 opens. Decide which utilities confirm the mutual-aid transfer and how they report the supply available for other customers.

Facilitator check. W03 leaves 10 units of priority demand unmet. Once W02 is authorized and available, the combined 40 units cover the 36 priority units and leave four units for other demand. Delta Waterworks returns as a local source after its operator confirms that power and treated-water quality are restored.

11.4 MISP Galaxy

Load the base Synthetic Exercise World and the electricity Galaxy files, then import the water supply Galaxy definition and cluster collection. Use galaxy type `exercise-world-water-supply`.

meta.entity-type	Relationships
`water-source`	`supplies-raw-water-to` identifies the treatment plant.
`water-treatment-plant`	`treats-water-from` links the raw source. `supplies-treated-water-to` links the district. `draws-power-from` points to an existing electricity distribution area.
`water-distribution-district`	`receives-treated-water-from` links the local plant. `exports-via` and `imports-via` link any modeled transfers.

meta.entity-type	Relationships
treated-water-transfer	originates-at and supplies give the direction between districts. meta.route-id matches the map and meta.transfer-state records the baseline.

The local records reference base countries by UUID. MISP Galaxy revision 779b780

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CHAPTER 12

Nacre civil and humanitarian services

This extension adds 12 representative hospitals, schools, clinics, shelters, relief depots, and community facilities across six Nacre countries. Each facility links to the local water supply, electricity, and telecommunications records. Relief facilities also reference transport terminals where they receive or dispatch supplies.

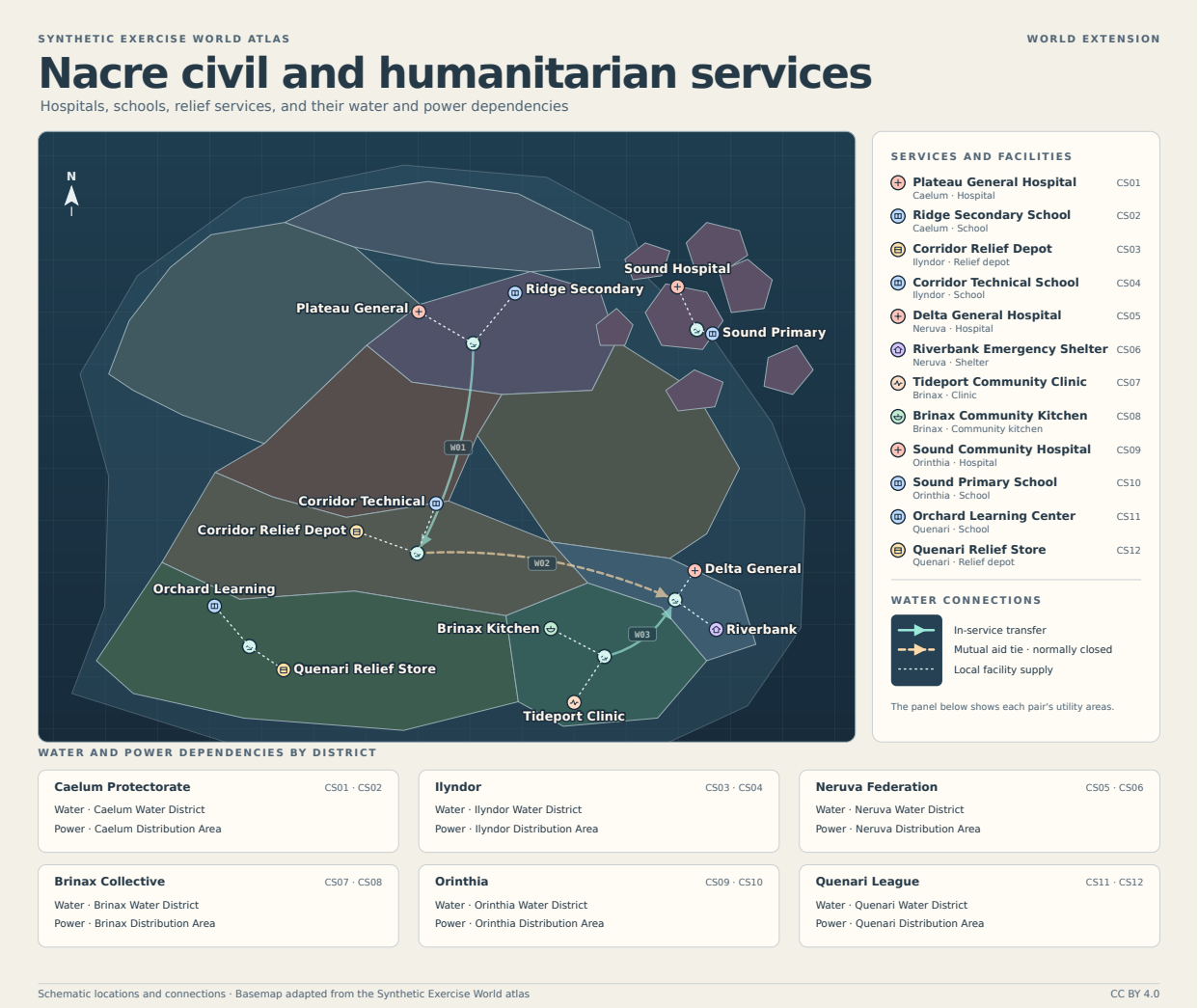

Figure 12.1: Map of civil and humanitarian facilities, treated-water transfers, and the water and electricity districts serving each facility

The editable SVG has separate layers for facilities, water districts and transfers, and the utility directory. The dotted lines show which district supplies water to each facility. The utility directory identifies the shared water and power dependencies for each pair of facilities.

12.1 Facilities

ID	Facility	Country	Main service
CS01	Plateau General Hospital	Caelum Protectorate	Inpatient hospital and emergency care

ID	Facility	Country	Main service
CS02	Ridge Secondary School	Caelum Protectorate	Secondary education and a family assistance desk during emergencies
CS03	Corridor Relief Depot	Ilyndor	Regional storage and dispatch of relief supplies
CS04	Corridor Technical School	Ilyndor	Technical education and designated overflow reception
CS05	Delta General Hospital	Neruva Federation	Inpatient hospital and emergency care
CS06	Riverbank Emergency Shelter	Neruva Federation	Temporary reception, drinking water, and family support
CS07	Tideport Community Clinic	Brinax Collective	Outpatient care and referrals
CS08	Brinax Community Kitchen	Brinax Collective	Meal preparation and distribution for relief operations
CS09	Sound Community Hospital	Orinthia	Inpatient and island emergency care
CS10	Sound Primary School	Orinthia	Primary education and a family reunification point
CS11	Orchard Learning Center	Quenari League	Primary education and community learning
CS12	Quenari Relief Store	Quenari League	Local staging of water and essential supplies

12.2 Water, electricity, and communications

Facilities	Water district	Electricity distribution	Telecom provider
CS01, CS02	Caelum Water District	Caelum Distribution Area	BlueBridge Networks
CS03, CS04	Ilyndor Water District	Ilyndor Distribution Area	Corridor Exchange
CS05, CS06	Neruva Water District	Neruva Distribution Area	DeltaReach
CS07, CS08	Brinax Water District	Brinax Distribution Area	Tidegrid Fiber
CS09, CS10	Orinthia Water District	Orinthia Distribution Area	Pelagic Radio
CS11, CS12	Quenari Water District	Quenari Distribution Area	Equator Air

The linked distribution areas are shared upstream dependencies. A local feeder incident can affect one building or treatment plant while other customers in the area remain in service. For exercise decisions, check the affected feeder and the status of upstream supply.

12.3 Humanitarian logistics

Facility	Transport handoff
Corridor Relief Depot	Corridor Interchange
Riverbank Emergency Shelter	Delta Port
Brinax Community Kitchen	Coast Terminal
Quenari Relief Store	Orchard Market Terminal

The Corridor–Delta Relief Supply Arrangement links the depot and shelter through the Corridor–Delta Railway (R02). It moves packaged drinking water and essential supplies through the two listed terminals. This relief shipment and the treated-water transfer W02 use separate routes and approvals.

12.4 Exercise case · Keep the hospital and shelter supplied

Use the same Delta Waterworks interruption as the water supply exercise. The hospital and shelter still have electricity and local telecom service. Together they account for Neruva's 36 priority water units in this window. Delta General Hospital needs 22 units and Riverbank Emergency Shelter needs 14.

Brinax is delivering 26 units of treated water over W03. The W02 mutual-aid tie is still awaiting confirmation. The Corridor Relief Depot has packaged drinking water equivalent to 10 units of the shelter's allocation, with space available on R02. For the exercise, the shipment can arrive within the allocation window.

Participant task. Allocate the 26 units, decide whether to send packaged water by rail, and inform the hospital, shelter, water utility, and electricity provider. Update the allocation once W02 begins delivering 14 units. Track packaged stock and piped supply separately.

Facilitator check. Assign 22 units of piped water to the hospital and four to the shelter. Send 10 units of packaged stock from the depot through Corridor Interchange and Delta Port to cover the shelter's gap. Once W02 is operating, 40 units of piped supply cover both facilities and leave four for other demand. Reassess further shipments and confirm the facilities' own utility service before changing their continuity arrangements.

12.5 MISP Galaxy

Load the base world and the water supply, electricity, telecom, and transport Galaxy files. Then import the Galaxy definition and cluster collection for galaxy type `exercise-world-civil-humanitarian`.

meta.entity_type	Relationships
`civil-humanitarian-facility`	`located-in` points to a base country. `receives-water-from`, `draws-power-from`, and `uses-telecom-provider` point to the respective utility records. `stages-supplies-via` links a relief facility to its transport terminal.
`humanitarian-support-arrangement`	`dispatches-from` and `delivers-to` connect the relief facilities. `uses-transport-route` identifies the transport leg.

The map adapts the Nacre atlas and the water supply overlay under CC BY 4.0. Original atlas · Water supply map · License

CHAPTER 13

Nacre data centers

This extension adds eight data centers with separate relationships for ownership, facility operation, network access, and utility power. It uses the existing carrier and fiber records from the telecommunications extension and the distribution areas from the electricity extension.

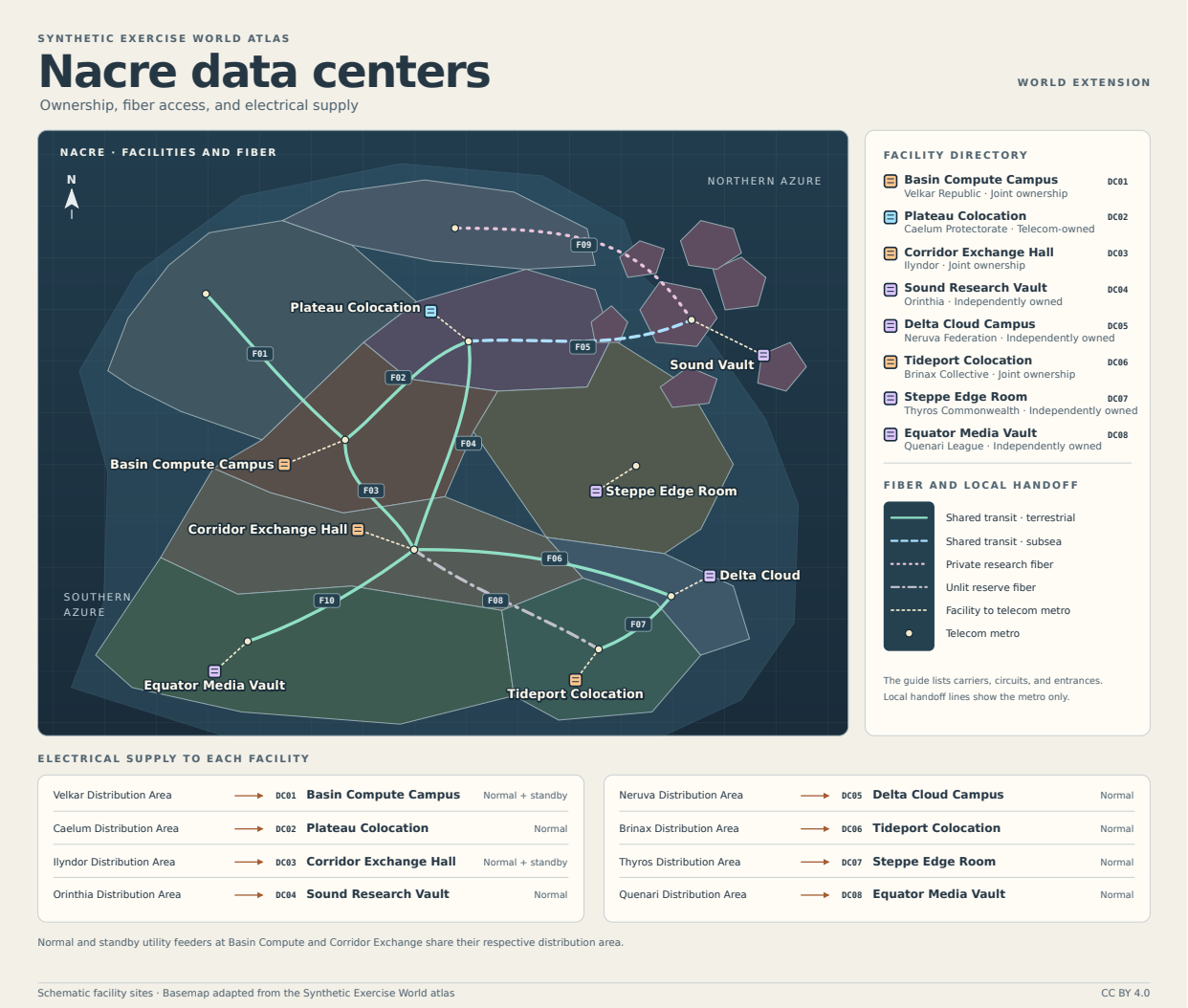

Figure 13.1: Map of eight Nacre data centers by ownership, their telecom handoffs and fiber routes, and electrical distribution dependencies

The editable SVG has layers for the basemap, telecom backbone, facilities and their local handoffs, and electrical supply. Facility markers are offset on the map for readability. The tables give the circuit and utility feed details.

13.1 Sites, ownership, and operations

ID	Site	Country	Ownership	Facility operator
DC01	Basin Compute Campus	Velkar Republic	Joint · BasinLink and HelixCore Group	BasinLink

ID	Site	Country	Ownership	Facility operator
DC02	Plateau Colocation	Caelum Protectorate	Telecom · BlueBridge Networks	BlueBridge Networks
DC03	Corridor Exchange Hall	Ilyndor	Joint · Corridor Exchange and CinderHarbor Group	NeutralGrid Colocation
DC04	Sound Research Vault	Orinthia	Independent · IronCore Dynamics	IronCore Dynamics
DC05	Delta Cloud Campus	Neruva Federation	Independent · Stratus Compute Services	Stratus Compute Services
DC06	Tideport Colocation	Brinax Collective	Joint · Tidegrid Fiber and AuroraHarbor Dynamics	Tidegrid Fiber
DC07	Steppe Edge Room	Thyros Commonwealth	Independent · VertexBridge Systems	VertexBridge Systems
DC08	Equator Media Vault	Quenari League	Independent · QuantumMatrix Labs	QuantumMatrix Labs

NeutralGrid Colocation runs the jointly owned Ilyndor hall. Stratus Compute Services owns and runs Delta Cloud Campus and contracts its circuits from two telecom companies. The independently owned enterprise sites buy access from their local telecom operators.

13.2 Telecom and fiber access

The site handoff connects each facility to its local telecom metro. A circuit can be provided by the local operator or delivered from a partner across a listed fiber path. The carrier column identifies the provider of the circuit. The entry column identifies the building entrance shared by any circuits with the same entry code at that facility.

Circuit	Facility	Carrier	Fiber path	Facility entry	Baseline access
C01	DC01	BasinLink	F01 · Iron Basin Trunk	north-entry	Shared transit
C02	DC01	BlueBridge Networks	F02 · Plateau Trunk	plateau-entry	Shared transit
C03	DC02	BlueBridge Networks	F02 · Plateau Trunk	west-entry	Shared transit
C04	DC02	BlueBridge Networks	F04 · Ridge Bypass	south-entry	Shared transit
C05	DC03	Corridor Exchange	F03 · Trade Corridor Spur	trade-entry	Shared transit
C06	DC03	BlueBridge Networks	F04 · Ridge Bypass	ridge-entry	Shared transit
C07	DC04	Pelagic Radio	F05 · Island Cable	harbor-entry	Shared transit
C08	DC04	Pelagic Radio	F09 · Polar Research Cable	research-entry	Private research traffic
C09	DC05	DeltaReach	F06 · Delta Trunk	delta-entry	Shared transit
C10	DC05	Tidegrid Fiber	F07 · Coastal Link	delta-entry	Shared transit
C11	DC06	Tidegrid Fiber	F07 · Coastal Link	coast-entry	Shared transit
C12	DC06	Corridor Exchange	F08 · Cooperative Reserve	reserve-entry	Unlit reserve
C13	DC07	SteppeWave	Local fiber	yard-entry	Domestic only
C14	DC08	Equator Air	F10 · Orchard Spur	orchard-entry	Shared transit

Sound Research Vault uses F09 for approved research data. Tideport's F08 circuit becomes usable after the reserve fiber is commissioned. Steppe Edge Room's access ends within the domestic SteppeWave network. At Delta Cloud Campus, two backbone paths converge at the same building entrance.

13.3 Electrical grid dependencies

Each utility feeder draws from a distribution area already linked to a grid hub in the electricity extension. Basin Compute Campus and Corridor Exchange Hall each have a normal and a standby feeder from the same local distribution area. A standby feeder provides a second local feed when its upstream distribution area remains energized.

Facility	Distribution area	Grid hub	Utility feeds
DC01	Velkar Distribution Area	Velkar Grid Hub	E01 normal, E02 standby
DC02	Caelum Distribution Area	Caelum Grid Hub	E03 normal
DC03	Ilyndor Distribution Area	Ilyndor Grid Hub	E04 normal, E05 standby
DC04	Orinthia Distribution Area	Orinthia Grid Hub	E06 normal
DC05	Neruva Distribution Area	Neruva Grid Hub	E07 normal
DC06	Brinax Distribution Area	Brinax Grid Hub	E08 normal
DC07	Thyros Distribution Area	Thyros Grid Hub	E09 normal
DC08	Quenari Distribution Area	Quenari Grid Hub	E10 normal

13.4 Exercise case · A shared entrance goes offline

A storm floods the communications duct at Delta Cloud Campus. Both C09 and C10 lose facility access at `delta-entry`. The telecom operators confirm that F06 and F07 remain in service between their metros. A regional freight-booking application has a ready standby copy at Corridor Exchange Hall, where C05 and C06 are available and the Ilyndor Distribution Area remains energized.

During the recovery, the Neruva utility interrupts E07 for repair work. Both carrier circuits are restored before the utility clears the Delta site for normal operation.

Participant task. Decide where to keep the booking service available after each event. Record which organizations report on the site entrance, backbone routes, application readiness, and electricity supply. Agree on the checks needed before returning service to Delta.

Facilitator check. Bring the application up at Corridor Exchange Hall under NeutralGrid Colocation. Delta's Stratus Compute Services coordinates the entrance repair with DeltaReach and Tidegrid Fiber. Return service to Delta after its facility operator confirms that access is usable and E07 has returned to normal. The Ilyndor standby feeder shares the same distribution dependency as its normal feeder, and the Brinax reserve fiber is still unlit.

13.5 MISP Galaxy

Load the base Synthetic Exercise World, the telecom Galaxy files, and the electricity Galaxy files. Then import the data center Galaxy definition and cluster collection. Use galaxy type `exercise-world-datacenters`.

meta.entity type	Relationships and fields
`data-center`	`owned-by` allows multiple owners. `operated-by` identifies the facility operator. `local-handoff-to` identifies the telecom metro. `located-in` references the base country.
`facility-company`	Represents the two new independent companies, with `located-in` links to their countries.

meta.entity type	Relationships and fields
facility-fiber-circuit	serves-facility links to the site, provided-by to the telecom carrier, and uses-fiber-route to a backbone path when present. facility-entry and access-policy describe the entrance and allowed service.
facility-power-feed	powers-facility links to the site, and draws-from links to an electricity distribution area. Its existing receives-from relation identifies the grid hub. feed-role distinguishes normal and standby feeds.

Facilities link back to their circuits with connected-via and to their feeders with powered-via. For dependency analysis, group circuits by facility and facility-entry, and group power feeds by distribution-area UUID.

Base country and company UUIDs were verified against MISP Galaxy revision 779b780.

The map adapts the Nacre atlas and reuses the telecom backbone paths. The extension is licensed under CC BY 4.0. Original atlas · Telecom map · License

CHAPTER 14

Nacre transport and logistics

This extension adds ten terminals across Nacre and fourteen routes for trucks and coaches, freight and passenger trains, coastal cargo boats, and ferries.

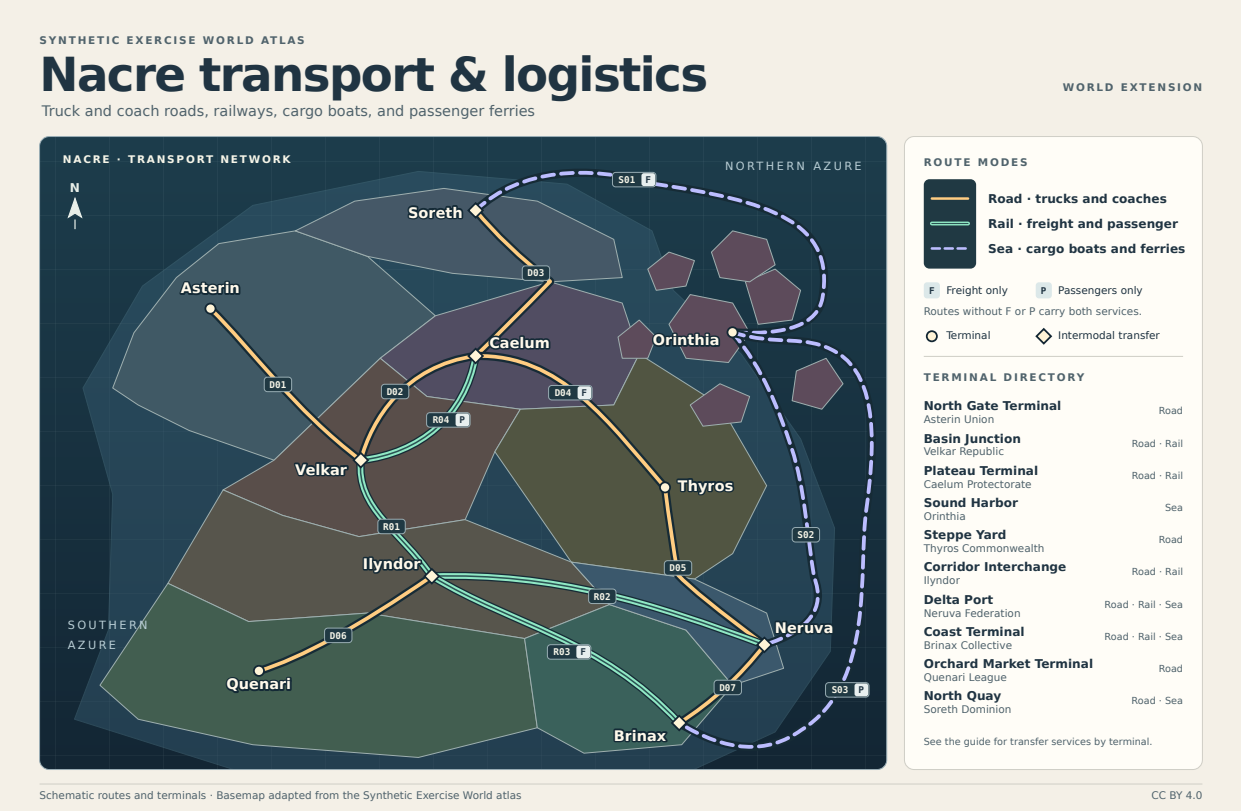

Figure 14.1: Map of Nacre showing road, rail, and sea routes, freight-only and passenger-only services, and intermodal terminals

The editable SVG separates the basemap, roads, railways, sea routes, and terminals into layers. Route IDs match the tables and Galaxy records. **F** marks freight-only routes, **P** marks passenger-only routes, and unmarked routes carry both. Diamonds indicate a change of mode for at least one service. The routes and terminal locations are schematic.

14.1 Terminals and transfers

Use the freight and passenger columns separately when planning a transfer. Brinax Coast Terminal, for example, can transfer pallets between trucks and trains and passengers between ferries and coaches.

Country	Terminal	Freight modes	Passenger modes
Asterin Union	North Gate Terminal	Road	Road
Velkar Republic	Basin Junction	Road, rail	Road, rail
Caelum Protectorate	Plateau Terminal	Road	Road, rail
Orinthia	Sound Harbor	Sea	Sea
Thyros Commonwealth	Steppe Yard	Road	Road
Ilyndor	Corridor Interchange	Road, rail	Road, rail

Country	Terminal	Freight modes	Passenger modes
Neruva Federation	Delta Port	Road, rail, sea	Road, rail, sea
Brinax Collective	Coast Terminal	Road, rail	Road, sea
Quenari League	Orchard Market Terminal	Road	Road
Soreth Dominion	North Quay	Road, sea	Road

14.2 Routes

All routes run in both directions in the exercise baseline. Road entries model truck and coach services. Rail entries model freight trains and scheduled passenger trains. The Azure Ro-Pax Route carries rolling cargo and passengers on the same ferry. The Brinax Island Ferry carries foot passengers.

Route	Terminals	Mode	Service
D01 · Northern Highway	North Gate Terminal ↔ Basin Junction	Road	Freight and passengers
D02 · Plateau Highway	Basin Junction ↔ Plateau Terminal	Road	Freight and passengers
D03 · Polar Pass	Plateau Terminal ↔ North Quay	Road	Freight and passengers
D04 · Steppe Haul Road	Plateau Terminal ↔ Steppe Yard	Road	Freight only
D05 · Delta Highway	Steppe Yard ↔ Delta Port	Road	Freight and passengers
D06 · Orchard Road	Corridor Interchange ↔ Orchard Market Terminal	Road	Freight and passengers
D07 · Coast Highway	Coast Terminal ↔ Delta Port	Road	Freight and passengers
R01 · Basin Main Line	Basin Junction ↔ Corridor Interchange	Rail	Freight and passengers
R02 · Corridor–Delta Railway	Corridor Interchange ↔ Delta Port	Rail	Freight and passengers
R03 · Brinax Freight Line	Corridor Interchange ↔ Coast Terminal	Rail	Freight only
R04 · Plateau Express	Basin Junction ↔ Plateau Terminal	Rail	Passengers only
S01 · Northern Supply Run	North Quay ↔ Sound Harbor	Sea	Freight only
S02 · Azure Ro-Pax Route	Sound Harbor ↔ Delta Port	Sea	Freight and passengers
S03 · Brinax Island Ferry	Sound Harbor ↔ Coast Terminal	Sea	Passengers only

14.3 Exercise case · A ferry berth closes

A storm damages the roll-on/roll-off berth at Neruva's Delta Port. The port suspends S02 while the passenger station and rail yard remain open. At Sound Harbor in Orinthia, 160 passengers and 30 pallets of essential supplies are waiting for transport to Neruva.

The next Brinax passenger ferry (S03) and its connecting coaches (D07) each have 180 seats. The next Northern Supply Run (S01) has room for 24 pallets. Assume the onward road and rail services listed for the case have space for those 24 pallets in the exercise window.

Participant task. Assign the passengers and pallets to routes, identify the transfer terminals, and tell each terminal what to expect. After an icy stretch closes the Steppe Haul Road (D04), revise the freight plan and identify how many pallets must wait at Sound Harbor.

Facilitator check. Send all 160 passengers to Brinax on S03, then to Neruva by coach on D07. Send 24 pallets to Soreth on S01 and transfer them to trucks at North Quay for D03. Before D04 closes, trucks can continue to Neruva via D04 and D05. After it closes, send the pallets on D02 to Basin Junction in Velkar, transfer them to a freight train on R01, and continue on R02 to Neruva via Ilyndor. Keep six pallets at Sound Harbor for a later sailing and record them separately from the freight already dispatched.

14.4 MISP Galaxy

Load the base Synthetic Exercise World galaxy and cluster collection first, then import the transport Galaxy definition and cluster collection. Use galaxy type `exercise-world-transport`.

Terminals use `meta.freight-modes` and `meta.passenger-modes` to describe the modes available for each service. Each terminal is `located-in` a base country by UUID and `terminates` its routes. Routes use `meta.route-id`, `meta.transport-mode`, `meta.services`, and `meta.vehicle-service`, and each is `terminated-by` two terminal UUIDs. To build an itinerary, filter routes by the service, then join routes at terminals that support the relevant mode changes.

The country UUIDs were verified against MISP Galaxy revision `779b780`.

The map uses recolored country outlines from the Synthetic Exercise World atlas and adds the transport layers. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 15

Nacre civil aviation

This extension adds civilian aircraft types, towered airports in all ten Nacre countries, regional air traffic control centers, and representative passenger and cargo services.

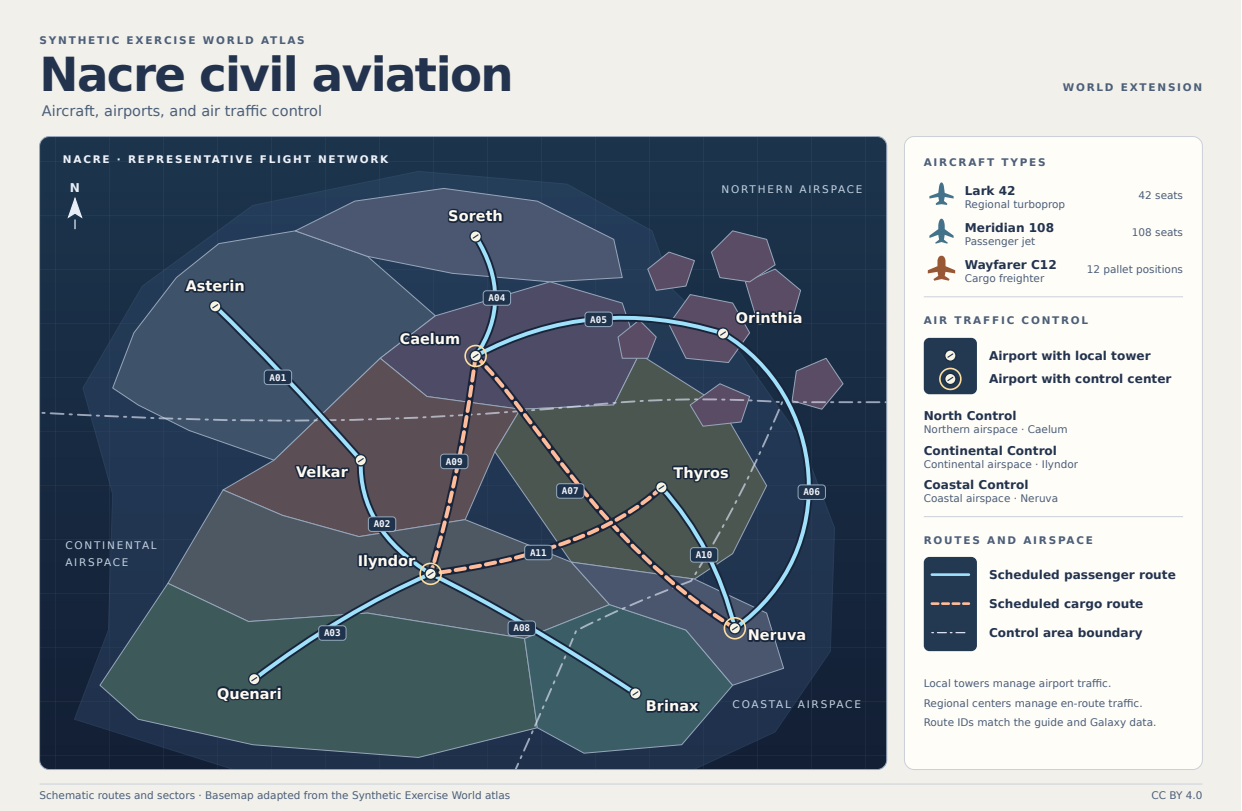

Figure 15.1: Map of Nacre showing towered airports, regional control centers and boundaries, and scheduled passenger and cargo routes

The editable SVG separates the basemap, airspace, passenger routes, cargo routes, and airports into layers. A ring marks an airport that also hosts a regional control center. Route IDs match the guide and Galaxy records. Routes and airspace boundaries are schematic.

15.1 Aircraft

Type	Role	Exercise capacity
Lark 42	Regional passenger turboprop	42 seats
Meridian 108	Passenger jet	108 seats
Wayfarer C12	Cargo freighter	12 pallet positions

15.2 Airports and air traffic controllers

Local towers coordinate arrivals, departures, and movements at their airports. Regional en-route controllers manage flights in their control areas and coordinate handoffs across area boundaries. Airport operators confirm which aircraft the field can receive and what handling capacity is available.

Control area	En-route center	Host airport
Northern airspace	North Control	Plateau Airport
Continental airspace	Continental Control	Corridor Airport
Coastal airspace	Coastal Control	Delta Gateway

Country	Airport	Local tower	En-route center	Aircraft accepted
Asterin Union	Northreach Airport	Asterin Tower	North Control	Lark 42
Velkar Republic	Basin Airport	Velkar Tower	Continental Control	Lark 42, Meridian 108
Caelum Protectorate	Plateau Airport	Caelum Tower	North Control	Lark 42, Wayfarer C12
Orinthia	Sound Airport	Orinthia Tower	North Control	Lark 42, Meridian 108
Thyros Commonwealth	Steppe Airport	Thyros Tower	Continental Control	Lark 42, Wayfarer C12
Ilyndor	Corridor Airport	Ilyndor Tower	Continental Control	Lark 42, Meridian 108, Wayfarer C12
Neruva Federation	Delta Gateway	Neruva Tower	Coastal Control	Lark 42, Meridian 108, Wayfarer C12
Brinax Collective	Coast Airport	Brinax Tower	Coastal Control	Meridian 108
Quenari League	Equator Airport	Quenari Tower	Continental Control	Lark 42
Soreth Dominion	Tundra Airfield	Soreth Tower	North Control	Lark 42

15.3 Scheduled routes

The listed services run in both directions in the exercise baseline.

Route	Airports	Aircraft	Service
A01 · Northreach Shuttle	Northreach Airport ↔ Basin Airport	Lark 42	Passengers
A02 · Basin Connector	Basin Airport ↔ Corridor Airport	Meridian 108	Passengers
A03 · Equator Shuttle	Corridor Airport ↔ Equator Airport	Lark 42	Passengers
A04 · Tundra Shuttle	Plateau Airport ↔ Tundra Airfield	Lark 42	Passengers
A05 · Sound Shuttle	Plateau Airport ↔ Sound Airport	Lark 42	Passengers
A06 · Azure Passenger Link	Sound Airport ↔ Delta Gateway	Meridian 108	Passengers
A07 · Plateau Cargo Link	Plateau Airport ↔ Delta Gateway	Wayfarer C12	Cargo
A08 · Coast Express	Corridor Airport ↔ Coast Airport	Meridian 108	Passengers
A09 · Corridor Cargo Link	Plateau Airport ↔ Corridor Airport	Wayfarer C12	Cargo
A10 · Steppe Shuttle	Steppe Airport ↔ Delta Gateway	Lark 42	Passengers
A11 · Steppe Cargo Link	Steppe Airport ↔ Corridor Airport	Wayfarer C12	Cargo

15.4 Exercise case · Arrivals paused at Delta Gateway

A storm pauses arrivals at Delta Gateway for 90 minutes. Coastal Control remains in service. The exercise starts with the A06 passenger flight airborne from Sound Airport with 94 passengers. A07 is still on the ground at Plateau Airport with 10 pallets awaiting dispatch.

Coast Airport confirms it can receive the Meridian 108 and handle up to 100 arriving passengers during the exercise window. An available Wayfarer C12 can carry freight on A09, and Corridor Airport can handle eight pallets in the same window.

Participant task. Coordinate a diversion for A06 and decide how much A07 freight to rebook. Identify the en-route centers, local towers, and airport operators involved, then draft a shared update for passengers, cargo handlers, and onward transport staff.

Facilitator check. Divert A06 to Coast Airport in Brinax. North Control coordinates the handoff to Coastal Control, and Brinax Tower and the airport operator coordinate the local arrival and reception of all 94 passengers. Rebook eight pallets on A09 to Corridor Airport and retain two at Plateau Airport. The freighter has 12 positions, and Corridor Airport's eight-pallet handling limit determines how much can move. North Control and Continental Control coordinate the A09 handoff, with Caelum and Ilyndor towers handling their respective departures and arrivals.

15.5 MISP Galaxy

Load the base Synthetic Exercise World galaxy and cluster collection first, then import the aviation Galaxy definition and cluster collection. Use galaxy type `exercise-world-aviation`.

meta.entity type	Metadata and relationships
`aircraft-type`	`airframe`, `service`, `capacity`, and `capacity-unit` describe the aircraft. Each type links to its routes with `used-on`.
`airport`	`airport-id` is a fictional identifier with the `NAC-` prefix. Each airport is `located-in` a base country by UUID, `served-by` its tower, and `within-control-area` of its regional center. `accepts-aircraft` records which types it can receive.
`air-traffic-control-unit`	`control-role` identifies a local tower or an en-route center. Towers link to the airport they serve. Centers link to their host airport, the airports in their `airspace`, and the corresponding towers.
`scheduled-air-route`	`route-id` matches the map, and `service` identifies passengers or cargo. The route `uses-type` to reference an aircraft and is `terminated-by` two airports. Airports link back with `terminates`.

To match an aircraft to a route or a diversion airport, follow the aircraft UUID and check the airport's `accepts-aircraft` relationships. The exercise states temporary availability and ground handling limits separately.

The country UUIDs were verified against MISP Galaxy revision `779b780`.

The map uses recolored country outlines from the Synthetic Exercise World atlas and adds the aviation layers. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 16

Nacre military aviation

This extension adds fictional military transport and rescue aircraft, four airfields, radar reporting sites, aviation kerosene pipelines, and road and maritime logistics. It uses the airports and control centers already defined in the civil aviation extension.

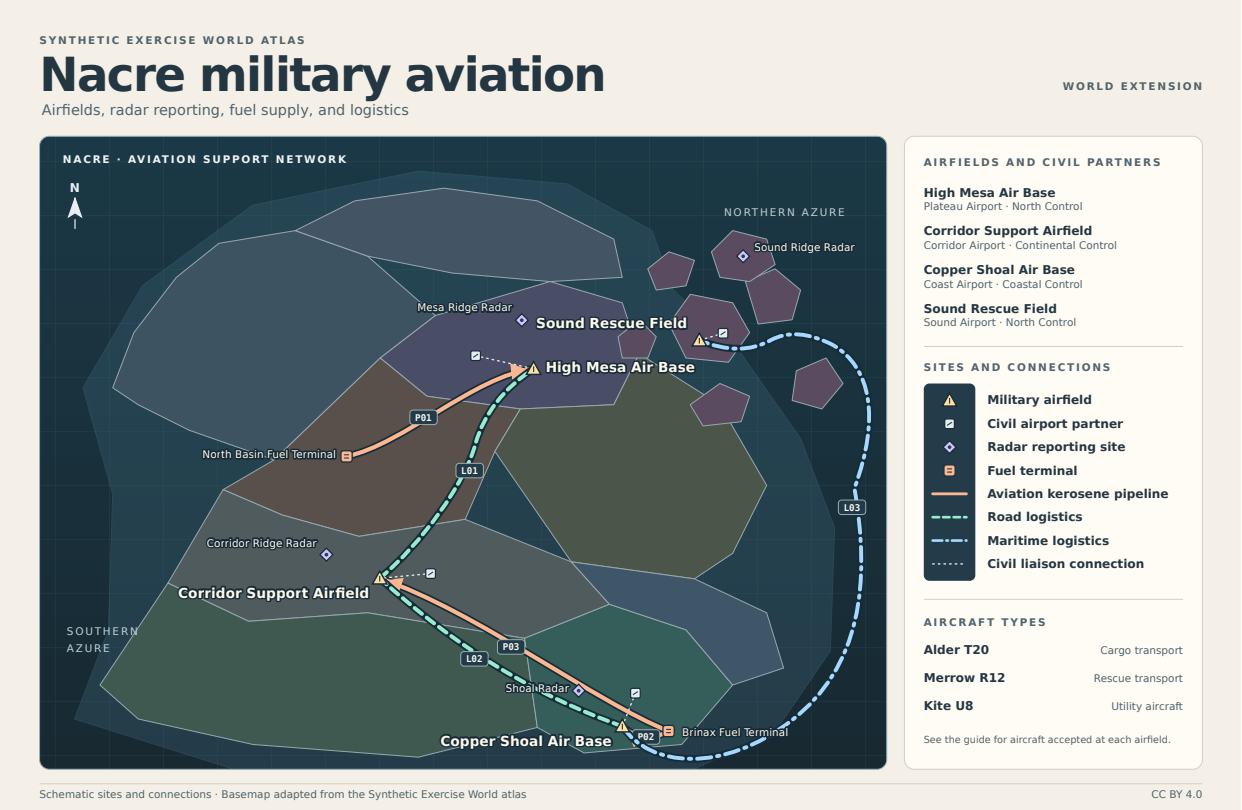

Figure 16.1: Map of Nacre showing military airfields and their civil partners, radar reporting sites, jet fuel pipelines, and logistics routes

The editable SVG has separate layers for the basemap, fuel pipelines, logistics routes, civil airport liaison, and sites. Pipeline arrows show the direction of fuel delivery. Radar symbols mark reporting sites and dotted civil liaison lines show coordination relationships. Site locations and routes are schematic.

16.1 Aircraft and airfields

Aircraft	Role	Example loads or missions
Alder T20	Cargo transport	Palletised relief supplies and maintenance stores
Merrow R12	Rescue transport	Rescue teams, medical transfers, and urgent relief supplies
Kite U8	Utility aircraft	Liaison teams and light cargo

Country	Military airfield	Aircraft accepted	Civil airport partner	En-route coordination
Caelum Protectorate	High Mesa Air Base	Alder T20, Kite U8	Plateau Airport	North Control

Country	Military airfield	Aircraft accepted	Civil airport partner	En-route coordination
Ilyndor	Corridor Support Airfield	Alder T20, Kite U8	Corridor Airport	Continental Control
Brinax Collective	Copper Shoal Air Base	Alder T20, Merrow R12	Coast Airport	Coastal Control
Orinthia	Sound Rescue Field	Merrow R12, Kite U8	Sound Airport	North Control

Military airfield teams manage local aircraft and ground handling. Civil airport partners share local traffic and availability updates. The civil en-route centers coordinate shared airspace for flights between areas.

16.2 Radar reporting

Site	Supports	Civil reporting partner
Mesa Ridge Radar	High Mesa Air Base	North Control
Corridor Ridge Radar	Corridor Support Airfield	Continental Control
Shoal Radar	Copper Shoal Air Base	Coastal Control
Sound Ridge Radar	Sound Rescue Field	North Control

Each site supplies air traffic reports and reports its availability to the linked center. The exercise uses those updates to inform civil and military coordination.

16.3 Fuel and logistics

North Basin Fuel Terminal in Velkar and Brinax Fuel Terminal supply aviation kerosene to mainland airfields. Sound Rescue Field receives stores and kerosene over the maritime logistics link. The sea service includes transfers between the stores quays and the two airfields.

Pipeline	Terminal → Airfield
P01 · Plateau Kerosene Line	North Basin Fuel Terminal → High Mesa Air Base
P02 · Copper Shoal Kerosene Line	Brinax Fuel Terminal → Copper Shoal Air Base
P03 · Corridor Kerosene Line	Brinax Fuel Terminal → Corridor Support Airfield

Logistics link	Endpoints	Mode	Cargo
L01 · Corridor–Mesa Road	Corridor Support Airfield ↔ High Mesa Air Base	Road	Relief supplies, maintenance stores
L02 · Brinax–Corridor Supply Road	Copper Shoal Air Base ↔ Corridor Support Airfield	Road	Relief supplies, ground equipment
L03 · Sound Stores Service	Copper Shoal Air Base ↔ Sound Rescue Field	Sea	Relief supplies, aviation kerosene

16.4 Exercise case · Relief supplies for Sound

After a storm, civil authorities request urgent medical supplies and other relief stores for Orinthia. Both shipments are staged at Corridor Support Airfield. The initial plan sends the urgent supplies via High Mesa on L01 for a Kite U8 flight to Sound Rescue Field. P01 is paused for inspection, so High Mesa cannot confirm fuel for the flight. Sound Ridge Radar also reports an interruption to its traffic reporting service.

Copper Shoal confirms that P02 is supplying fuel. A Merrow R12 is available at Copper Shoal, and Sound Rescue Field can receive it in the exercise. L02 and L03 remain available for freight.

Participant task. Trace an alternate route for the two shipments, confirm aircraft and fuel availability, and draft a joint update for the military airfields, civil airport partners, and regional controllers. Identify who confirms the island arrival before the urgent shipment is dispatched.

Facilitator check. Stage both shipments at Copper Shoal via L02. Assign the Merrow R12 to the urgent shipment once the receiving airfield and civil controllers confirm the flight, and move the remaining stores by L03. Have Sound Ridge report the interruption to North Control. Coastal Control and North Control coordinate the cross-area flight, with the military fields and their civil airport partners sharing local status. Track delivery and keep the flight pending until those confirmations are in place.

16.5 MISP Galaxy

Load the base Synthetic Exercise World galaxy and cluster collection and the civil aviation Galaxy files, then import the military aviation Galaxy definition and cluster collection. Use galaxy type `exercise-world-military-aviation`.

meta.entity-type	Relationships
`military-aircraft-type`	`operates-from` lists airfields, which link back with `accepts-aircraft`.
`military-airfield`	`located-in` references a base country. `liaises-with` and `coordinates-with` reference a civil airport and en-route center, respectively.
`radar-reporting-site`	`supports` identifies the military airfield, and `reports-to` references the civil en-route center.
`aviation-fuel-terminal` and `aviation-fuel-pipeline`	Each pipeline `originates-at` a terminal and `supplies` an airfield. The terminal `feeds` the pipeline and the airfield links back with `receives-fuel-via`.
`military-logistics-route`	`terminated-by` links both airfields, which link back with `terminates`. `transport-mode` and `cargo` describe the service.

Pipeline and logistics records use `meta.route-id` to match the map. Civil references use the UUIDs from the civil aviation cluster collection. Base country references use MISP Galaxy revision `779b780`.

The map uses recolored country outlines from the Synthetic Exercise World atlas and adds the aviation support layers. The extension is licensed under CC BY 4.0. Original atlas · License

CHAPTER 17

Nacre army

Five Nacre countries maintain an army or a territorial reserve in this roster. Their public liaison teams coordinate overland logistics, engineering support, and requests from civil authorities. Ilyndor and Quenari use reserve services in the exercise baseline.

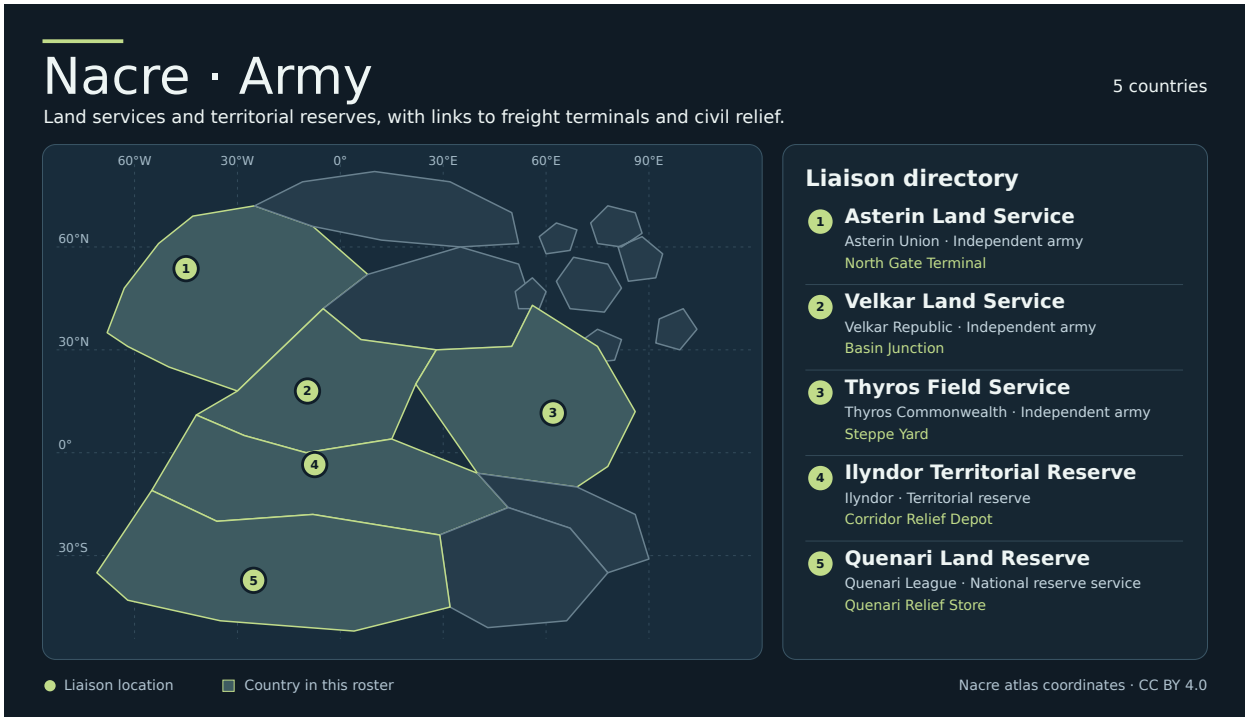

Figure 17.1: Nacre map of army liaison locations and a directory by country

17.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Asterin Union	Asterin Land Service	Independent army	North Gate Terminal	Coordinates engineering support requests and tracks relief freight leaving the northern terminal.
Velkar Republic	Velkar Land Service	Independent army	Basin Junction	Coordinates heavy freight documentation and handoffs between rail and road carriers.
Thyros Commonwealth	Thyros Field Service	Independent army	Steppe Yard	Coordinates road-clearance requests and civil freight staging in the steppe.
Ilyndor	Ilyndor Territorial Reserve	Territorial reserve	Corridor Relief Depot	Receives requests for civil engineering support and coordinates cross-border relief handoffs.
Quenari League	Quenari Land Reserve	National reserve service	Quenari Relief Store	Reconciles emergency stores and connects district requests to civilian relief dispatch.

Liaison points inherit the coordinates of their named hosts on the shared fictional grid. Highlighted countries have a service represented in this roster. Nacre geographic atlas

The air force roster includes the Ilyndor Reserve Air Wing, which is part of the Ilyndor Territorial Reserve.

17.2 Exercise case · Supplies at Basin Junction

A flood closes the road used to dispatch a relief consignment from Basin Junction. The Basin Main Line still connects the junction to Corridor Interchange. Corridor Relief Depot agrees to receive the consignment, and the Ilyndor Territorial Reserve can arrange the last handoff once the depot confirms availability.

Participant task. Assign a reporting lead at Basin Junction, request a receiving contact in Ilyndor, and prepare a handoff record with the consignment ID, quantity, and current custodian.

Facilitator check. The Velkar Land Service handles the origin report. The Ilyndor Territorial Reserve confirms the receiving plan with Corridor Relief Depot. Keep the original consignment ID across the rail and road handoffs, and mark delivery complete when the depot acknowledges it.

17.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from transport and logistics and civil and humanitarian services. Import the Galaxy definition and cluster collection under type `exercise-world-army`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`has-liaison-at`	References an existing host facility. The liaison point uses the host's coordinates.
`coordinates-with`	References a civil or defense partner for the exercise role.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

The map adapts Nacre's geography under CC BY 4.0. Original atlas · License

Nacre navy

Four coastal and island countries field naval services. The roster covers fleet administration, port liaison, and the coordination of maritime relief cargo. Coast guards handle the rescue and maritime safety roles described in their own extension.

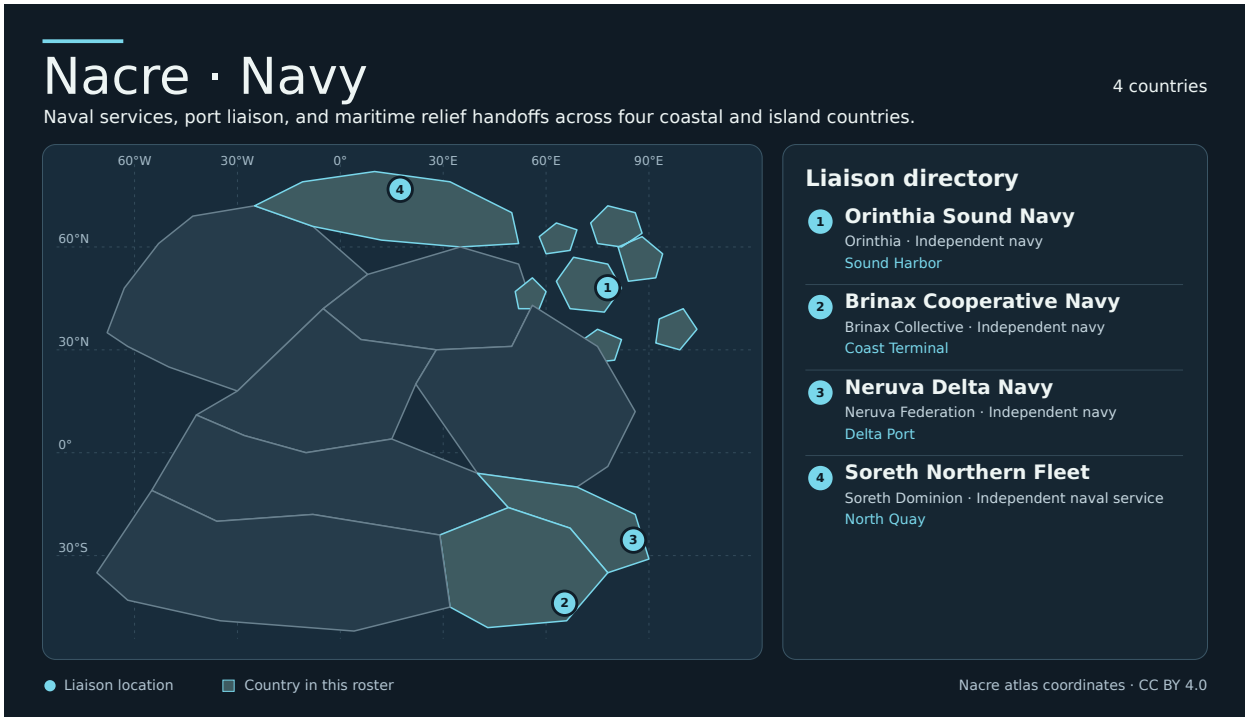

Figure 18.1: Nacre map of navy liaison locations and a directory by country

18.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Orinthia	Orinthia Sound Navy	Independent navy	Sound Harbor	Coordinates island port liaison and maritime relief consignments departing Sound Harbor.
Brinax Collective	Brinax Cooperative Navy	Independent navy	Coast Terminal	Coordinates terminal access and receiving arrangements for maritime relief cargo.
Neruva Federation	Neruva Delta Navy	Independent navy	Delta Port	Maintains fleet administration and liaises with Delta Port on incoming relief manifests.
Soreth Dominion	Soreth Northern Fleet	Independent naval service	North Quay	Coordinates cold-chain and port availability updates for northern supply services.

Liaison points inherit the coordinates of their named hosts on the shared fictional grid. Highlighted countries have a service represented in this roster. Nacre geographic atlas

The marines roster links each contingent to its parent navy. The coast guard roster identifies rescue partners, including the Soreth Polar Coast Guard within the Northern Fleet.

18.2 Exercise case · Stores wait at Sound Harbor

The scheduled relief delivery from Sound Harbor to Delta Port is delayed by a berth closure. Sound Harbor can hold the shipment. Delta Port expects to offer a new receiving slot after an inspection, and the scheduled carrier needs one agreed update from both ports.

Participant task. Have the dispatch and receiving liaison teams reconcile the cargo record. Decide what information the carrier needs and what remains pending until the new slot is confirmed.

Facilitator check. The Orinthia Sound Navy confirms custody at Sound Harbor. The Neruva Delta Navy obtains receiving status from Delta Port. Both teams use the same consignment reference and mark the replacement arrival window as provisional until Delta Port confirms it.

18.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from transport and logistics. Import the Galaxy definition and cluster collection under type `exercise-world-navy`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`has-liaison-at`	References an existing host facility. The liaison point uses the host's coordinates.
`coordinates-with`	References a civil or defense partner for the exercise role.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

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Nacre air force

Five countries have an air service or an air component. This roster identifies the organizations and liaison desks behind airlift and rescue coordination. The military aviation extension supplies the airfields and aircraft, and civil aviation supplies the civil airports and controllers.

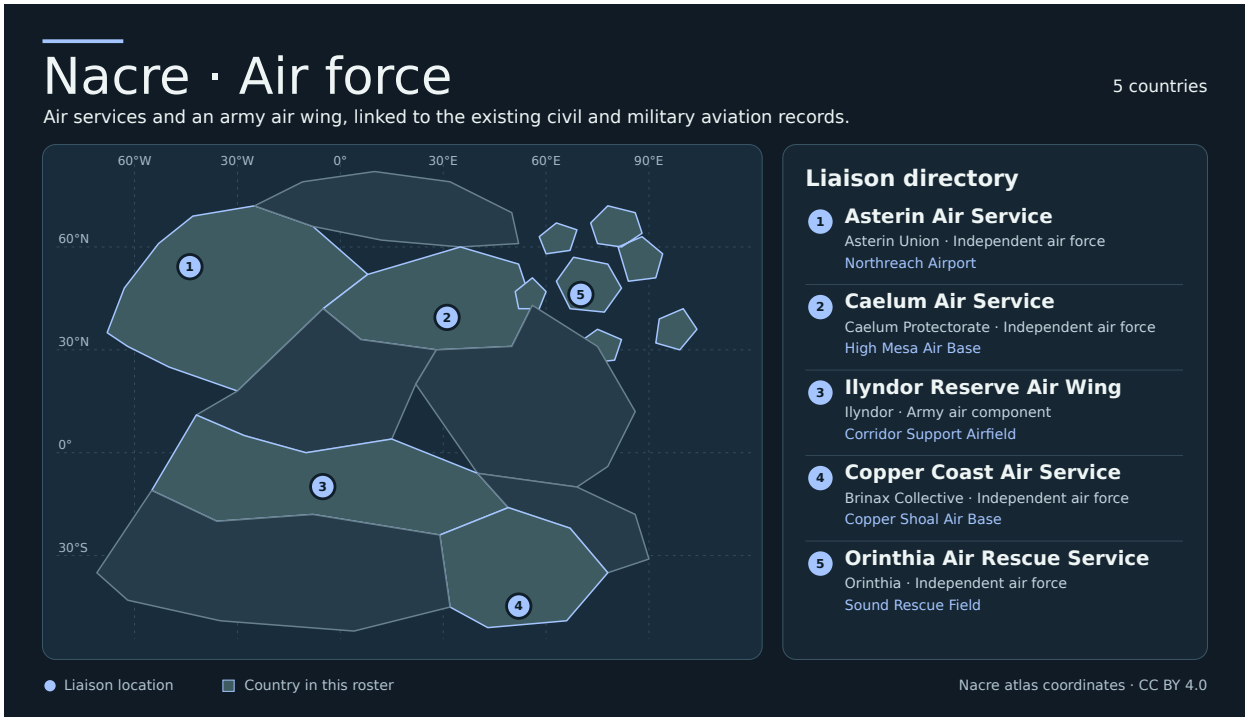

Figure 19.1: Nacre map of air force liaison locations and a directory by country

19.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Asterin Union	Asterin Air Service	Independent air force	Northreach Airport	Maintains airlift and rescue liaison with northern civilian aviation.
Caelum Protectorate	Caelum Air Service	Independent air force	High Mesa Air Base	Coordinates airlift staging and shared-airspace requests for the plateau.
Ilyndor	Ilyndor Reserve Air Wing	Army air component	Corridor Support Airfield	Coordinates civil support flights for the territorial reserve.
Brinax Collective	Copper Coast Air Service	Independent air force	Copper Shoal Air Base	Coordinates airlift dispatch and civil reporting for the southern coast.
Orinthia	Orinthia Air Rescue Service	Independent air force	Sound Rescue Field	Coordinates island rescue aviation and arrival status with the civil airport.

Liaison points inherit the coordinates of their named hosts on the shared fictional grid. Highlighted countries have a service represented in this roster. Nacre geographic atlas

The space force roster links Caelum's space component to Caelum Air Service.

19.2 Exercise case · Confirm a relief arrival at Sound

Brinax is preparing an emergency relief flight. Sound Rescue Field can accept the proposed arrival, but Sound Airport is still confirming local handling arrangements. The civil controllers request a single update that separates the receiving field's status from civil coordination.

Participant task. Identify the dispatch liaison, the receiving liaison, and their civil contacts. Record the confirmations in one movement note and decide when the status can move from proposed to confirmed.

Facilitator check. Copper Coast Air Service checks departure readiness with Copper Shoal and the civil side with Coastal Control. Orinthia Air Rescue Service confirms receiving readiness with Sound Rescue Field and obtains the liaison update from Sound Airport. Keep the proposed movement pending until the required confirmations are recorded.

19.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from army, civil aviation, and military aviation. Import the Galaxy definition and cluster collection under type `exercise-world-air-force`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`has-liaison-at`	References an existing host facility. The liaison point uses the host's coordinates.
`coordinates-with`	References a civil or defense partner for the exercise role.
`part-of`	Identifies the parent service for a named component.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

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CHAPTER 20

Nacre space force

Three countries organize space-service liaison differently. Asterin has a distinct service, Caelum has an air force component, and Velkar uses a joint office. These desks exchange service status and timing observations with Waymark reference monitors.

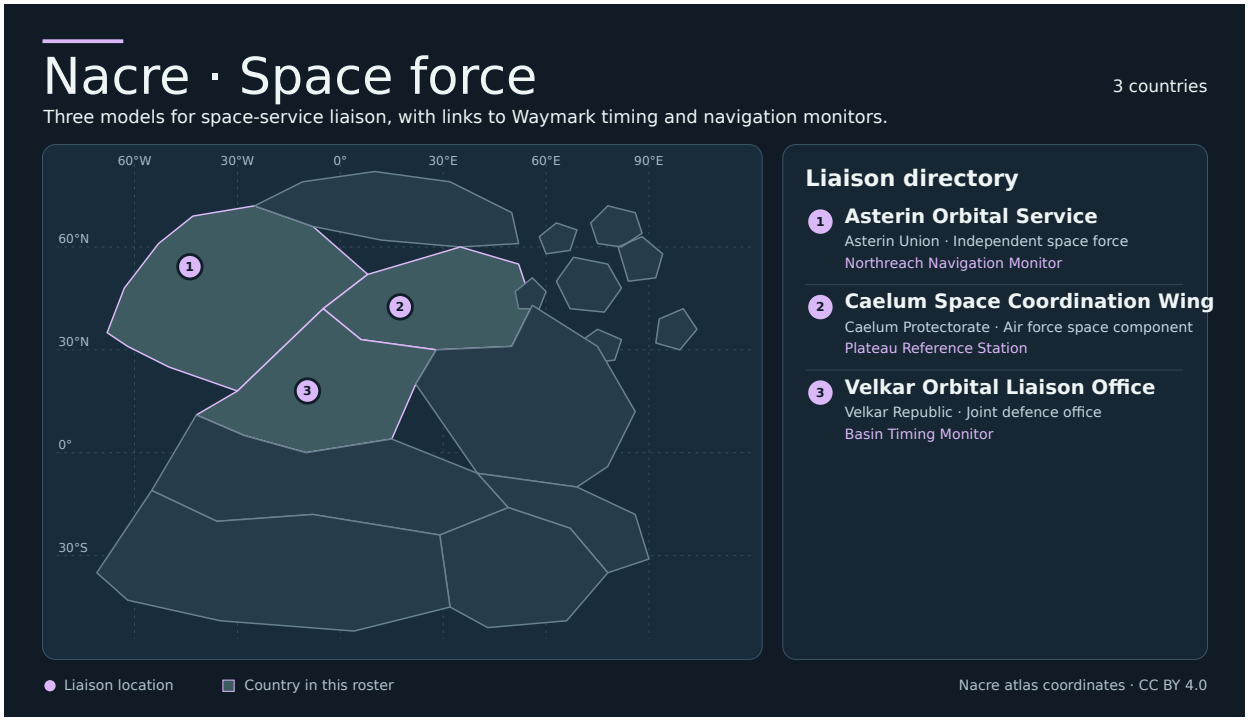

Figure 20.1: Nacre map of space force liaison locations and a directory by country

20.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Asterin Union	Asterin Orbital Service	Independent space force	Northreach Navigation Monitor	Consolidates civilian timing service notices and reports local navigation observations.
Caelum Protectorate	Caelum Space Coordination Wing	Air force space component	Plateau Reference Station	Shares reference monitor status and consolidates plateau service advisories.
Velkar Republic	Velkar Orbital Liaison Office	Joint defence office	Basin Timing Monitor	Coordinates timing advisories and service reporting with the Basin monitor.

Liaison points inherit the coordinates of their named hosts on the shared fictional grid. Highlighted countries have a service represented in this roster. Nacre geographic atlas

20.2 Exercise case · Timing reports disagree

The Northreach Navigation Monitor reports degraded timing quality. The Plateau Reference Station and Basin Timing Monitor report normal timing against their own local baselines. A shared notice draft currently marks the entire Waymark service as degraded.

Participant task. Compare observations by site and reporting window. Decide which desk consolidates the notice, label what the reports establish, and identify the update each monitor must provide next.

Facilitator check. The Asterin desk reports the local degradation. Caelum and Velkar share their own time-stamped observations. Publish a scoped status update that distinguishes Northreach from unaffected reporting sites and keeps a system-wide assessment pending.

20.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from air force and satellite navigation. Import the Galaxy definition and cluster collection under type `exercise-world-space-force`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`has-liaison-at`	References an existing host facility. The liaison point uses the host's coordinates.
`coordinates-with`	References a civil or defense partner for the exercise role.
`part-of`	Identifies the parent service for a named component.
`liaises-with`	References the Waymark service for public navigation and timing status.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

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CHAPTER 21

Nacre marines

Orinthia, Brinax, and Neruva organize their marine contingents under their navies. The roster models ship-to-shore relief handoffs and contact points for ports and civil responders. Each map marker is a liaison location.

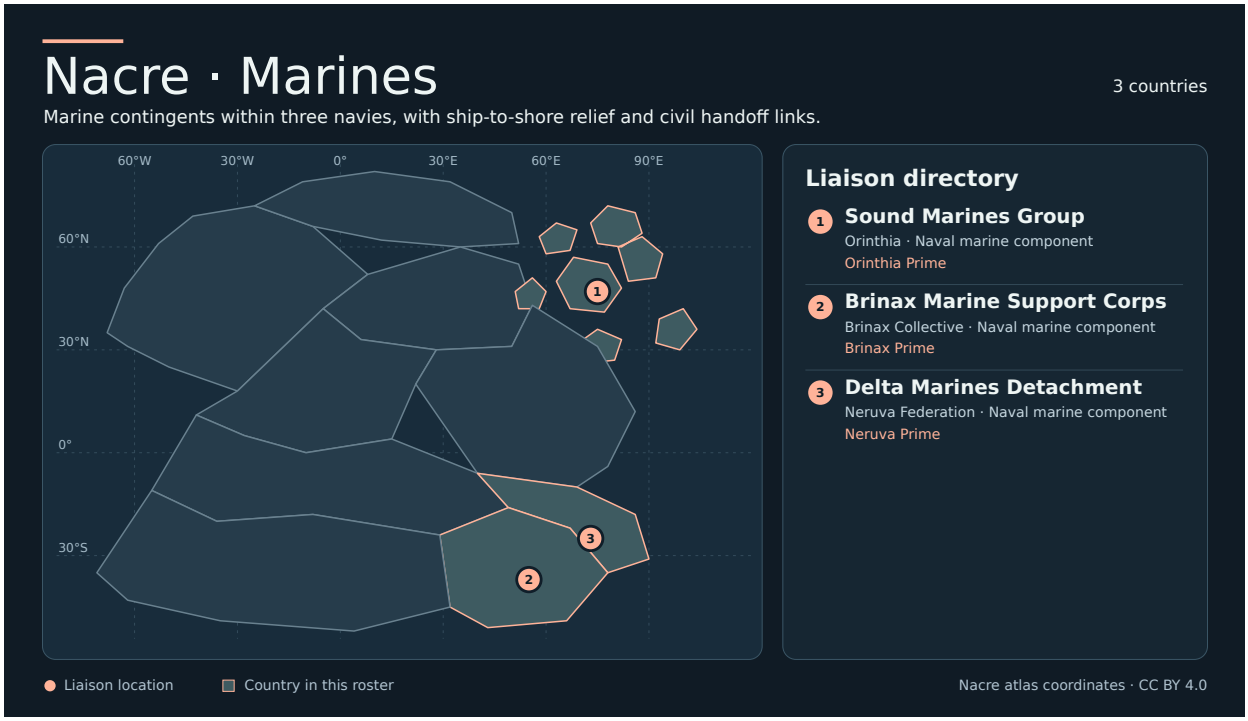

Figure 21.1: Nacre map of marines liaison locations and a directory by country

21.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Orinthia	Sound Marines Group	Naval marine component	Orinthia Prime	Coordinates island relief transfers between Sound Harbor and civil receiving teams.
Brinax Collective	Brinax Marine Support Corps	Naval marine component	Brinax Prime	Coordinates ship-to-shore cargo custody and receiving confirmations.
Neruva Federation	Delta Marines Detachment	Naval marine component	Neruva Prime	Reconciles maritime relief manifests with shore and shelter receiving teams.

Liaison points use the capital coordinates on the shared fictional grid. Each detachment also links to the port and civil receiving team it coordinates with. Nacre geographic atlas

21.2 Exercise case · A dockside manifest differs

A navy manifest lists 18 relief parcels for transfer at Delta Port. The Neruva landing liaison counts 17 parcels on the quay. The Riverbank Emergency Shelter has a matching 17-item receipt prepared and is waiting for the handoff.

Participant task. Reconcile the carrier and shore records, identify who signs for each transfer, and agree how the outstanding parcel appears in the shared report.

Facilitator check. The Neruva Delta Navy preserves the carrier's 18-item manifest. The Delta Marines Detachment records custody of 17 parcels and gives the shelter staff a 17-item transfer record. Enter a single open discrepancy against the original manifest and assign a follow-up owner at Delta Port.

21.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from navy, transport and logistics, and civil and humanitarian services. Import the Galaxy definition and cluster collection under type `exercise-world-marines`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`coordinates-with`	References a civil or defense partner for the exercise role.
`part-of`	Identifies the parent service for a named component.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

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CHAPTER 22

Nacre coast guard

Four coastal and island countries have a coast guard entry. Orinthia and Neruva use civilian authorities, Brinax has a uniformed maritime safety service, and Soreth assigns the coast guard role to a naval component. Their shared responsibilities include rescue liaison, safety notices, and passenger reception.

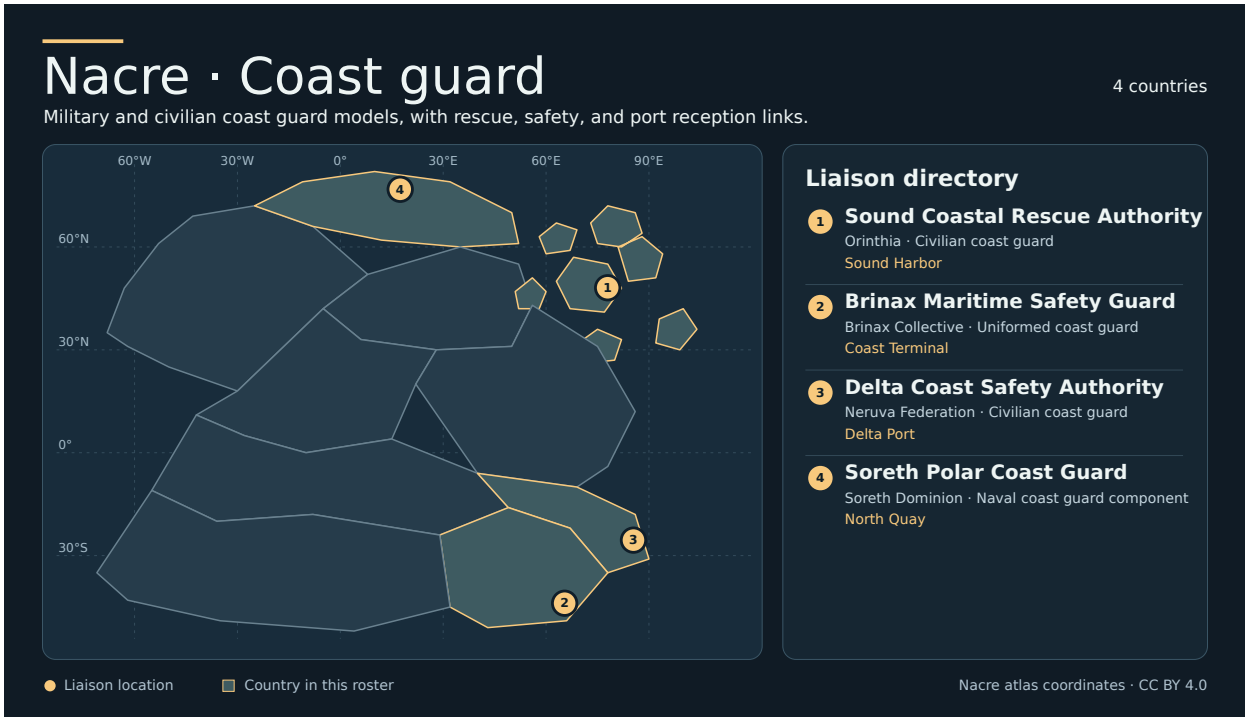

Figure 22.1: Nacre map of coast guard liaison locations and a directory by country

22.1 Country roster

Country	Service	Organization	Liaison site	Exercise role
Orinthia	Sound Coastal Rescue Authority	Civilian coast guard	Sound Harbor	Coordinates ferry rescue notifications and island passenger reception.
Brinax Collective	Brinax Maritime Safety Guard	Uniformed coast guard	Coast Terminal	Coordinates safety notices, port reception, and clinic liaison.
Neruva Federation	Delta Coast Safety Authority	Civilian coast guard	Delta Port	Coordinates waterway closures and passenger reception in the delta.
Soreth Dominion	Soreth Polar Coast Guard	Naval coast guard component	North Quay	Coordinates cold-weather maritime safety and reception at the northern quay.

Liaison points inherit the coordinates of their named hosts on the shared fictional grid. Highlighted countries have a service represented in this roster. Nacre geographic atlas

22.2 Exercise case · A rescue reception changes ports

A ferry reports that it needs assistance. Sound Harbor is initially named as the passenger reception point, but the berth becomes unavailable. Coast Terminal confirms a receiving berth, and Tideport Community Clinic asks for the latest reception status.

Participant task. Agree which team updates the rescue incident record, which team confirms the receiving arrangements, and what should appear in the shared passenger reception notice.

Facilitator check. Sound Coastal Rescue Authority retains the incident reference and shares the change with Brinax Maritime Safety Guard. Brinax confirms the berth with Coast Terminal and updates the clinic liaison. Both teams use the same incident reference and record which authority is coordinating reception.

22.3 MISP Galaxy

Load the base Synthetic Exercise World and the linked records from navy, transport and logistics, and civil and humanitarian services. Import the Galaxy definition and cluster collection under type `exercise-world-coast-guard`.

Relationship	Meaning
`located-in`	References the service's country in the base Galaxy.
`has-liaison-at`	References an existing host facility. The liaison point uses the host's coordinates.
`coordinates-with`	References a civil or defense partner for the exercise role.
`part-of`	Identifies the parent service for a named component.

The geographic feature ID matches the service cluster UUID. Base country references use the pinned MISP Galaxy revision `779b780`.

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Nacre seismic hazards

This extension maps five fictional fault traces, seven monitoring sites, one volcano, and the epicenter of a simulated offshore earthquake. The onshore traces cross the Velkar basin, Caelum plateau, and Thyros steppe. The offshore traces lie east of Orinthia and Neruva.

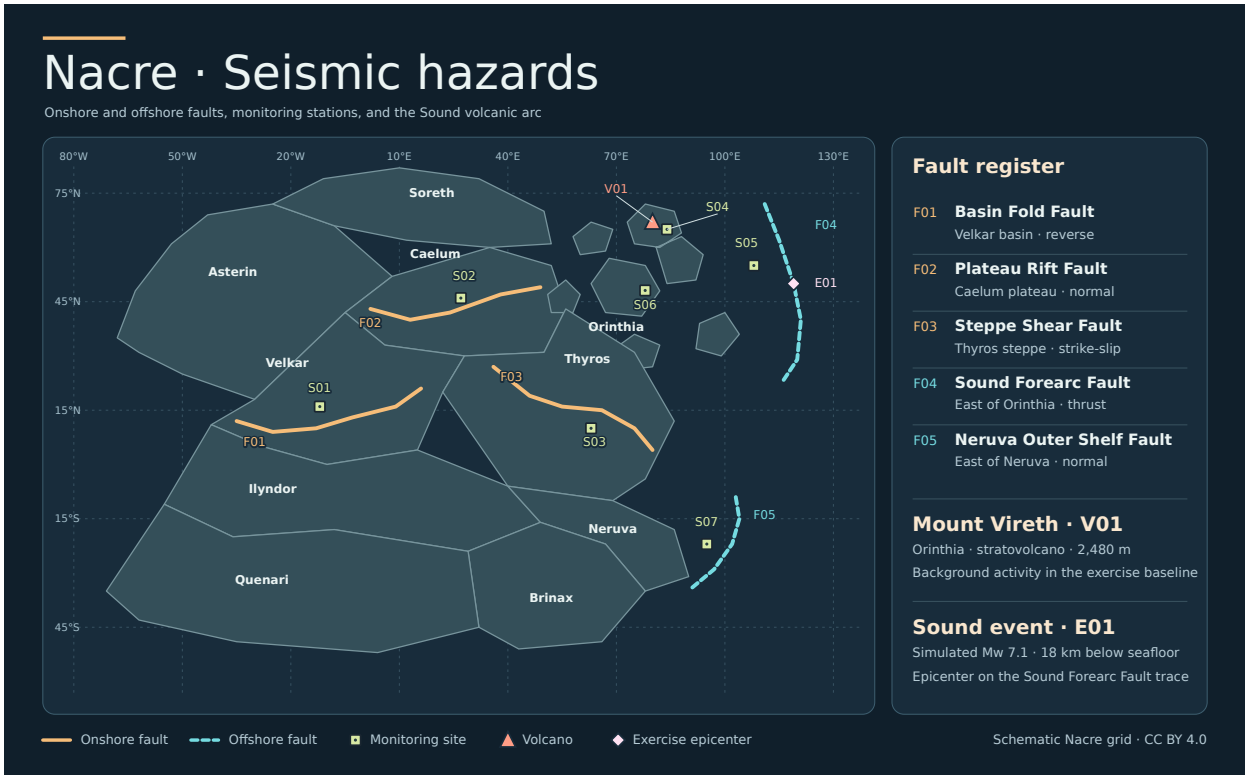

Figure 23.1: Map of Nacre with three onshore faults, two offshore faults, seven monitoring sites, Mount Vireth, and the offshore exercise epicenter

The editable SVG uses solid lines for onshore faults and dashed lines for offshore faults. IDs match the tables and Galaxy records. All positions use the shared fictional Nacre grid. Trace endpoints and station coordinates below are in decimal degrees, longitude first. The full trace vertices are in the GeoJSON.

23.1 Fault register

ID	Fault	Setting and region	Fault motion	Trace ends `[lon, lat]`
F01	Basin Fold Fault	Onshore, Velkar Republic	Reverse	`[-35, 12]` to `[16, 21]`
F02	Plateau Rift Fault	Onshore, Caelum Protectorate	Normal	`[2, 43]` to `[49, 49]`
F03	Steppe Shear Fault	Onshore, Thyros Commonwealth	Strike-slip	`[36, 27]` to `[80, 4]`
F04	Sound Forearc Fault	Offshore, east of Orinthia	Thrust	`[111, 72]` to `[116, 23]`

ID	Fault	Setting and region	Fault motion	Trace ends [lon, lat]
F05	Neruva Outer Shelf Fault	Offshore, east of Neruva Federation	Normal	[91, -34] to [103, -9]

The lines mark the modeled surface or seafloor traces. They show where faults appear in the exercise geography. Offshore country associations identify the nearest featured coast for coordination.

23.2 Monitoring sites

ID	Site	Setting	Coordinates [lon, lat]	Instrument and use
S01	Velkar Basin Seismic Station	Onshore, Velkar Republic	[-12, 16]	Broadband seismometer for F01
S02	Mesa Seismic Station	Onshore, Caelum Protectorate	[27, 46]	Broadband seismometer for F02
S03	Steppe Seismic Station	Onshore, Thyros Commonwealth	[63, 10]	Broadband seismometer for F03
S04	Vireth Observatory	Onshore, Orinthia	[84, 65]	Seismometer, GNSS receiver, and gas sampler for V01
S05	Sound Shelf Seismometer	Offshore, east of Orinthia	[108, 55]	Ocean-bottom seismometer for F04
S06	Sound Harbor Tide Gauge	Onshore, Orinthia	[77.9585, 48.1067]	Water-level gauge at Sound Harbor
S07	Delta Shelf Seismometer	Offshore, east of Neruva Federation	[95, -22]	Ocean-bottom seismometer for F05

Seismometers record ground motion. The harbor tide gauge records local water levels. The exercise uses both streams so participants can distinguish the earthquake report from observations on the shoreline.

23.3 Mount Vireth

V01 is a stratovolcano in the Sound volcanic arc on a northern Orinthian island, at [80, 67]. Its modeled summit is 2,480 m above sea level. The exercise starts with background activity. Vireth Observatory compares seismic, deformation, and gas observations with that baseline.

23.4 Exercise case · An offshore earthquake at Sound

The Sound offshore exercise earthquake (E01) occurs on the Sound Forearc Fault. The exercise bulletin gives a moment magnitude of Mw 7.1, an epicenter at [119, 50], and a source depth of 18 km below the local seafloor. The Sound Shelf Seismometer reports shaking. The Sound Harbor Tide Gauge initially has no confirmed departure from its baseline, and Vireth Observatory reports background activity. A later tide-gauge report shows an unusual water-level oscillation. The exercise controller provides any official coastal advisory as a separate update.

Participant task. Prepare an initial situation report for Sound Harbor, the Sound Coastal Rescue Authority, and Sound Community Hospital. Then revise it when the tide-gauge report arrives. Identify who will issue the next update and record the time and source of each observation.

Facilitator check. The first report records the offshore earthquake and the current harbor and volcano observations separately. The second adds the observed water-level change and routes it to the rescue authority for coordination under its coastal emergency plan. The port confirms its operating status, the hospital reports reception readiness, and the incident lead tracks the official advisory separately from the observations.

23.5 MISP Galaxy

Load the base Synthetic Exercise World and the transport, coast guard, and civil and humanitarian services Galaxy files. Import the seismic hazards Galaxy definition and cluster collection under type `exercise-world-seismic`.

meta.entity type	Relationships
`seismic-fault`	`observed-by` identifies the modeled seismic station. `meta.fault-motion` describes the fault.
`seismic-monitoring-site`	`monitors` identifies a fault or volcano. `hosted-at` links the tide gauge to Sound Harbor. `meta.instrument` lists the equipment.
`volcano`	`observed-by` links Vireth Observatory. `meta.activity-baseline` records the starting exercise condition.
`exercise-earthquake`	`models-source-on` identifies the fault. `seismic-observation-at` and `water-level-observation-at` identify the two observation sites. `exercise-coordination-with` links the port, rescue authority, and hospital.

`located-in` references an onshore country and `near-country` references the named coast for offshore records. `meta.map-id` matches the map labels. `meta.geographic-feature-id` joins each record to its atlas feature. Nacre geographic atlas

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CHAPTER 24

Acknowledgements

Alexandre Dulaunoy conceived the Synthetic Exercise World Format and did the initial work to develop it. The idea grew out of a practical problem he encountered in cyber threat intelligence (CTI) exercises and work on open CTI standards. Both could benefit from neutral, reusable examples grounded in a fictional world.

Jean-Louis Huynen helped clarify the threat actor database. Participants at hackathon.lu in 2026 shared feedback and ideas. Thanks in particular to Philippe Parage and Benjamin Collas from the Range42.lu team.

The CIRCL team, including Aurélien Thirion and Sami Mokaddem, contributed ideas and reviewed the work. Many other members of the MISP project core team also shared ideas and reviewed the material.

Thank you to everyone who took part in earlier CTI exercises, gave feedback, and shared clever ideas. Their contributions helped shape the project.