# ICARUS Matrix: generating novel scenarios in outer space cybersecurity

*Instructions* : Pick a variable from two or more columns to construct a scenario.  This is not a comprehensive list but only a starter kit.

| | A:  Threat actors | B:  Motivations | C:  Cyberattack methods | D:  Victims / stakeholders | E:  Space capabilities affected |
|---|---|---|---|---|---|
| 1 | Major space-faring states | Nationalism | Insider attack | Major space-faring states | GPS / GNSS |
| 2 | Other space-faring states | Dominance / influence | Social engineering | Other space-faring states | Earth observation / remote sensing |
| 3 | Non-space-faring states | Financial / economic | Ransomware | Non-space-faring states | Military intelligence and capabilities |
| 4 | Insider threats | Fraud | Honeypot | State-owned entities | Spacecraft, robotic or crewed |
| 5 | Political terrorists | Employment | Sensor attack | Military and other contractors | Life-sustaining services |
| 6 | Mercenaries | Blackmail / coercion | Signals jamming | Scientific organizations | Other essential services |
| 7 | Eco-terrorists | Terror | Signals spoofing or hijacking | Corporations | Other safety of personnel / others |
| 8 | Corporations | Warfare | Eavesdrop / man-in-the-middle | Wealthy individuals | Loss of sovereignty / control |
| 9 | Mobile service providers | Disinformation | Network security | General population / society | Earthbound services |
| 10 | Launch service providers | Espionage | Supply chain, hardware | Indirect / secondary stakeholders | Emergency services |
| 11 | Social engineering groups | Sabotage | Supply chain, software | Marginalized populations | Financial transactions |
| 12 | Organized crime | Extremist ideology | AI / ML / computer vision | Social movements | Mining or manufacturing |
| 13 | Chaos agents | Cult of personality | Attack coverup | Cultural / religious groups | Scientific capability / research |
| 14 | Religious / apocalyptic | Paranoia / anti-technology | Software hacking | Unions / labor reps | Asteroid detection systems |
| 15 | Other ideological groups | Boredom / trolling | Systems security | Customers / users via their data | Space weather monitoring |
| 16 | Proxies / agents, esp. unwilling | See world burn / chaos | Multi-phase attack / APT | Individual targets | Space traffic management |
| 17 | Noncombatants, esp. unwilling | Social / distributive justice | Cloud hacking | Critical specialists | Space tourism |
| 18 | Amateur hackers / enthusiasts | Intellectual / tech demo | Account compromise | Critical infrastructure | Launch capabilities |
| 19 | AI / machine learning | Revenge / retaliation | Quantum computing / comms | Internet / media / entertainment | Communications |
| 20 | Unknown / anonymous | First contact, for and against | Death by 1,000 cuts / long game | AI / machine learning | News / social media |