

NASA SPACE APPS CHALLENGE PROJEKT HALO



Bhupinder Singh, Jakob Gutersohn, Valéry Piot und David Noé Bänziger



Sensorenliste

Roadmap for Halo: Improve Wellbeing with Smart Integration (Towards 2030).

Wie wirkt NASA dem Muskelabbau

Ressourcen & Links

business Canva

Archiv

Q&A

Sensorenliste

Physiologische Sensoren

1. **PPG-Sensor (Photoplethysmographie)** – Herzfrequenz (HF), Herzfrequenzvariabilität (HRV), Sauerstoffsättigung (SpO₂).
 2. **EKG-Sensor (Elektrokardiographie, textile Elektroden oder Elektrodenpflaster)** – genauere Messung von HF und HRV, Stressindikatoren.
 3. **EDA/GSR-Sensor (Elektrodermale Aktivität / Hautleitwert)** – Stress, emotionale Erregung.
 4. **Hauttemperatursensor** – Stress, Ermüdung, zirkadiane Rhythmusänderungen.
 5. **Atmungssensor** (z. B. Brustgurt oder intelligente Textilien, alternativ über PPG/Bewegung abgeleitet) – Atemfrequenz und Variabilität.
-

Bewegungs- & Schlafsensoren

1. **Beschleunigungssensor (3-Achsen-Accelerometer)** – Aktivitätslevel, Schlaf-/Wachrhythmus.
 2. **Gyroskop** – Haltung, Bewegungsqualität (ermöglicht Erkennung von Ermüdung).
 3. **Aktigraphie (aus Accelerometer + Gyroskop)** – detaillierte Schlafanalyse.
-

Kognitive / Emotionale Sensoren (optional, aber wertvoll)

1. **EEG (leichte Trockenelektroden-Stirnbänder)** – Gehirnaktivität, Ermüdung, Aufmerksamkeit, Stress.
-

Minimal-Set für ein Alltags-Wearable (z. B. Smartwatch oder Ring):

- PPG
- EDA/GSR
- Hauttemperatur

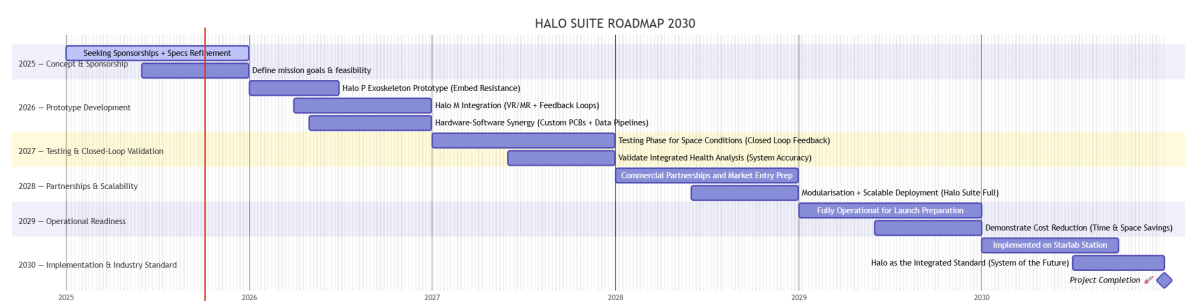
- Accelerometer

Erweitertes Set (in Smart-Clothing oder für Tests):

- EKG
- Atmung
- EEG

Roadmap for Halo: Improve Wellbeing with Smart Integration (Towards 2030)

The roadmap is driven by the commitment to develop a **long-term, real-world solution** beyond a weekend prototype. The ultimate goal is for well-being to be "built into the suit, the station, the system".



Phase 1: Prototype Development and Core Refinement

(Focus: Moving from a concept demonstration to a functionally robust system)

Objective	Description & Rationale	Source Support
1. Advanced Halo P Hardware Development	Moving beyond the current "low-level prototype" and "basic" concept of the exoskeleton to engineer a finalized, wearable system that embeds resistance directly into the suit. This exoskeleton must be adaptive and replace bulky equipment like ARED.	
2. Finalize Halo M Software Integration	Fully developing the software component that integrates all validated mental health tools—Virtual Reality (VR), Circadian Light Systems, and Mindfulness Apps—into a single, unified system.	
3. Establish Seamless Interdisciplinary Synergy	Ensuring the seamless integration between hardware and software . This involves finalizing the technical components (e.g.,	

Objective	Description & Rationale	Source Support
	custom PCBs and software infrastructure) required to link the data streams.	

Phase 2: Closed-Loop Validation and System Scalability

(Focus: Proving the core innovation and preparing for market entry)

Objective	Description & Rationale	Source Support
4. Implement and Test Closed-Loop Feedback	Implementing and rigorously testing the core innovation: feeding the physical data from the Halo P sensors directly into the Halo M mental support system . This creates the adaptive, personalized, closed-loop health platform that improves well-being.	
5. Validation of New Health Analysis	Proving that the integrated system delivers a "completely new way of analysing astronaut health" by offering direct and detailed insight into physical and mental health for both the user and ground stations.	
6. Modularisation and Scalability	Ensuring the entire Halo Suite (Halo P, Halo M, Central Application) is modular, scalable , and ready for real-world deployment .	

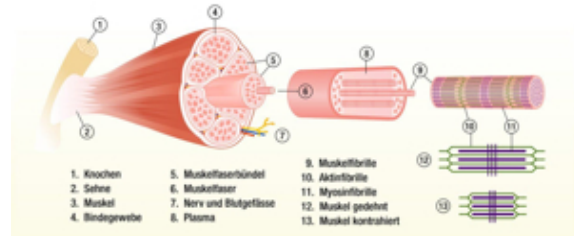
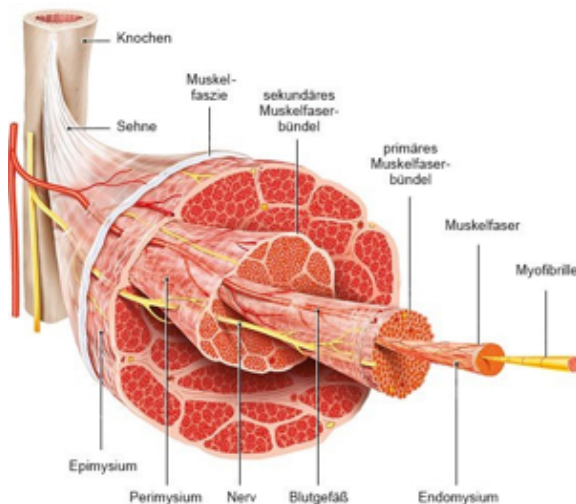
Phase 3: Commercial Deployment and Long-Term Impact (Leading to 2030)

(Focus: Filling the market gap and becoming the industry standard)

Objective	Description & Rationale	Source Support
7. Target Commercial Spaceflight Industry	Actively marketing and deploying the solution to the commercial spaceflight industry , where the sources identify a clear market gap for integrated well-being systems.	
8. Demonstrate Operational Cost Reduction	Showing measurable impact by demonstrating that Halo saves time (due to reduced exercise time) and saves resources and space on the station, thereby helping to drive down cost.	
9. Achieve Mission Risk Mitigation	Proving that the system effectively addresses major mission risks, including counteracting severe muscle atrophy (loss of up to 50% strength over six months) and mitigating	

Objective	Description & Rationale	Source Support
	cognitive issues like fatigue and isolation. This allows astronauts to regain control over their bodies and minds.	
10. Establish Halo as the Standard	Realizing the project vision of filling a critical gap by providing a convergence of proven science, smart engineering, and real astronaut needs, cementing its role as the integrated well-being system for the future of spaceflight.	

Wie wirkt NASA dem Muskelabbau



Die NASA verhindert Muskelabbau bei Astronauten durch gezieltes Krafttraining, regelmäßige Bewegung mit speziellen Apparaten und eine eiweißreiche Ernährung. Diese Trainingsgeräte erzeugen künstliche Belastung, ähnlich wie auf der Erde, um Muskeln und Knochen zu stärken. Zusätzlich achten die Astronauten auf genügend Regeneration und eine ausgewogene Kalorienzufuhr, da Muskeln in Ruhephasen wachsen und sich reparieren.
<https://www.arcanum-gesundheitszentrum.de/astronauten-der-nasa-trainieren-mit-neurofeedback>

Im detail

X1 Exoskelett

Im detail

Die NASA wirkt dem Muskelabbau vor allem durch spezielle Trainingsmethoden entgegen, die sowohl auf der Erde als auch im All angewendet werden, um Muskelmasse und Knochendichte zu erhalten. Besonders hervorzuheben sind zwei Ansätze: das Trampolintraining und Neurofeedback.

Effektives Training auf dem Trampolin

Laut einer NASA-Studie von 1980 ist das Trampolintraining eine der effizientesten und effektivsten Trainingsformen. Es bietet eine deutliche Verbesserung der Sauerstoffaufnahme und Muskelstimulation im Vergleich zum Laufen, und eine Dauer (z. B. 10 Minuten) ist bis zu 68% effektiver als 30 Minuten Joggen. Für Astronauten ist das auch im Orbit relevant, da das Training auf dem Trampolin Muskel- und Knochenschwund erheblich reduziert, was bei längeren Raumflügen ein zentrales Anliegen ist. Das Training wirkt durch eine Kombination aus Belastungsreiz und Koordinationstraining, um den Muskelschwund zu minimieren.[trampolintests+2](#)

Gegenmassnahmen im All

Neben dem Trampolintraining entwickeln die Raumfahrtbehörden auch spezielle Geräte wie Galileo, um Muskel- und Knochenverlust im All zu minimieren. Diese simulieren den menschlichen Gang und erzeugen durch Wipp-Bewegungen Muskelkontraktionen in Schwerelosigkeit. Ausserdem wird geforscht, künstliche Schwerkraft in einer Zentrifuge zu erzeugen, um den Abbau weiter zu reduzieren.[dlr-innospace](#)

Neurofeedback und weitere Massnahmen

Zusätzlich nutzt die NASA Neurofeedback-Training, das die Konzentrations- und Leistungsfähigkeit der Astronauten steigert, um die psychische Fitness zu sichern. Die Kombination aus physischem Training, spezieller Technik und psychologischer Betreuung hilft, den Muskel- und Knochenabbau zu bremsen und die Gesundheit der Astronauten zu erhalten.[arcantum-gesundheitszentrum+1](#)

Zusammenfassung

Zusammenfassend lässt sich sagen, dass die NASA den Muskelabbau durch eine Kombination aus effizienten körperlichen Trainingsmethoden wie Trampolintraining, innovativen Geräten zur Muskelstimulation im All sowie neuropsychologischen Massnahmen effektiv entgegenwirkt. Diese Ansätze sind essenziell, um die Gesundheit und Leistungsfähigkeit der Astronauten während und nach Weltraummissionen zu sichern.

1. <https://www.trampolintests.de/workout/nasa-studie/>
2. <https://www.ndr.de/ratgeber/gesundheit/Muskelabbau-erkennen-und-behandeln,muskelabbau114.html>
3. <https://www.dlr-innospace.de/innospaceexpo/G&E/Home/content/junge.html>
4. <https://www.arcanum-gesundheitszentrum.de/astronauten-der-nasa-trainieren-mit-neurofeedback/>
5. <https://idw-online.de/-dY6AA>
6. <https://medizinischetrampolin.de/nasa-trampolin/>
7. <https://innovationorigins.com/de/fuer-mond-und-mars-missionen-gemeinsame-bettruhestudie-von-dlr-nasa-und-esa/>
8. <https://www.redbull.com/ch-de/theredbulletin/training-im-weltraum-schwerelosigkeit>
9. <https://www.deutschlandfunkkultur.de/liegekur-fuer-eine-raumfahrtstudie-nasa-und-esa-stecken-100.html>
10. <https://www.berliner-zeitung.de/gesundheit-oekologie/trotz-training-wie-schwerelosigkeit-die-muskulatur-veraendert-li.149492>

X1 Exoskelett

NASA entwickelt ein Exoskelett namens X1, das Astronauten sowohl auf der Erde als auch im Weltraum als Kraftverstärker und Trainingsgerät dienen soll. Das etwa 24 bis 26 Kilogramm schwere Exoskelett wird am Körper getragen und hat motorisierte Gelenke an Hüfte und Knie sowie passive Gelenke für Fußbewegungen. Im All hilft es Astronauten, Muskelschwund und Knochenabbau durch Übungen gegen den Widerstand der Motoren zu verhindern. Außerdem kann es beim Gehen auf Planeten mit geringer Schwerkraft unterstützen. Das Projekt befindet sich noch in der Entwicklungsphase, wird aber als wichtiger Beitrag zur Gesunderhaltung der Crew auf Langzeitmissionen angesehen.[vol+2](#)

1. <https://www.vol.at/nasa-arbeitet-am-exoskelett-erinnerungen-an-starship-troopers/3391934>
2. <https://www.golem.de/news/exoskelett-nasa-entwickelt-roboterbeine-fuer-raumfahrt-und-medizin-1210-95074.html>
3. <https://www.techno-science.net/de/nachrichten/nasa-entdeckt-unerwartete-auswirkung-der-schwerelosigkeit-auf-knochen-N26767.html>
4. <https://www.heise.de/news/Fitnessgeraet-fuer-Astronauten-NASA-entwickelt-Exoskelett-1730384.html>
5. <https://ntrs.nasa.gov/api/citations/20140000694/downloads/20140000694.pdf>
6. <https://futurezone.at/science/nasa-zwergtintenfische-all-mikroben-spacex/401403606>
7. https://www.reddit.com/r/space/comments/1inxil3/nasa_successfully_joins_sunshade_to_roman/
8. <https://www.srf.ch/news/international/neun-monate-im-all-gestrandete-iss-astronauten-sind-zurueck-auf-der-erde>
9. <https://taz.de/Roboter-auf-Weltraummission/!5203548/>
10. <https://futurezone.at/science/iss-astronauten-weltraum-weltraumschrott-russland-spacewalk/402268464>



Ressourcen & Links

https://gymkirchenfeld-my.sharepoint.com/:f:/g/personal/jakob_gutersohn_mygymer_ch/Es6yuN59xQtHhiJwiWCtxw8BzzCwTa4DNUuOvblZjTtp6A?e=WtDcG8

▼ Allgemeine Infos

Website international:

[NASA Space Apps Challenge](#)

Website Schweiz

[NASA International Space Apps Challenge - Team Lucerne](#)

Challenges:

[NASA Space Apps Challenge](#)

Figma Datei:

<https://www.figma.com/design/Cm75vAzNorBX6pUpko9aKx/ISS-25th-Anniversary-Apps?node-id=0-1&t=HLhAAoexj6B4VqUi-1>

Infos Website:

NASA International Space Apps Challenge

Main Hackathon Event

DATE: October 4-5, 2025
TIME: 10:00 - 20:00
VENUE: Technopark Lucerne
TYPE: 48-Hour Hackathon

The main event! Join teams from around the world in this 48-hour hackathon where you'll tackle real NASA challenges using Earth and space science data. Work alongside brilliant minds to develop innovative solutions that could impact life on Earth and missions in space. From climate monitoring to asteroid tracking, from ISS applications to planetary exploration - the universe is your laboratory.

Hackathon Focus Areas

- ▶ Develop tech-driven apps for climate studies and environmental monitoring
- ▶ Create solutions for space flight operations and mission planning
- ▶ Build tools for ISS research and space station applications
- ▶ Integrate AI and Machine Learning into space science applications
- ▶ Present solutions to expert judges and compete for prizes

11d 15h
UNTIL LAUNCH

🚀 **Hackathon (Oct 4–5)** – from **8 AM on Oct 4** until **6 PM on Oct 5**.

- For those who prefer to rest at night: please bring your **sleeping bag**, we'll provide a rest area.
- **Showers** will be available to all participants.
- **Free food & drinks** throughout the event.
- Don't forget to bring your **working materials** (laptop, chargers, etc.)!

▼ Programme

Github Repo:

<https://github.com/Kirchenfeldrobotics/NasaSpaceAppsChallenge25>

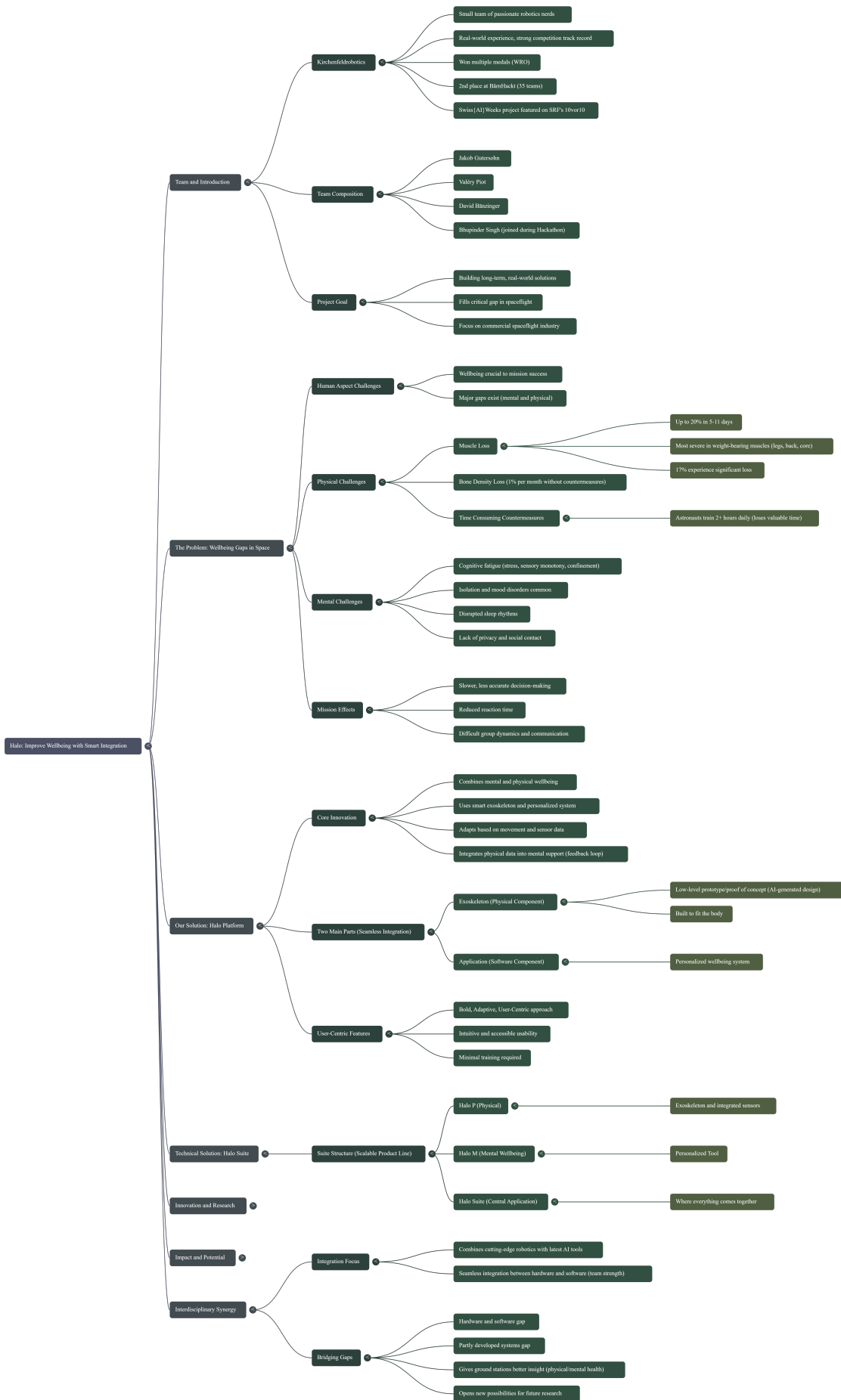
Onedrive Sharepoint (if needed):

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▼ Ressourcen zur Challenge

→ hinzufügen wenn für Challenge entschieden

https://www.canva.com/design/DAG06Sh_8KE/NJavk5_fw4-p5ciraHYyIlg/view?utm_content=DAG06Sh_8KE&utm_campaign=designshare&utm_medium=link2&utm_source=uniquelinks&utlId=h7ff3a15
[Kirchenfeldrobotics](#)



business Canva

Business Model Canvas: Halo System (The Halo Suite)

The Halo system is a comprehensive, closed-loop health platform designed to address critical gaps in astronaut well-being through the seamless integration of physical hardware and personalised mental software.

The Business Model Canvas

Designed for:

Designed by: Bhusinder Singh, Jakob Gutersohn, Valéry Plot and David Bänzinger

Date: 06.10.2025

Version: 2

Key Partnerships Who do we need to work with? Partnerships are needed to leverage existing space medicine research and concepts (e.g., concepts proven by NASA and ESA). The focus on commercial spaceflight implies potential partnerships with private companies in that sector.	Key Activities What essential actions must we perform? Interdisciplinary Synergy: Combining cutting-edge robotics (hardware) with the latest AI tools (software). Developing Feedback Loops: Building the necessary infrastructure (PCBs, software) for seamless integration between the hardware and software systems. Innovation and Research: Building on concepts already backed by research (VR, light therapy, X1 exoskeleton concepts) and refining them into a scalable, unified system.	Value Propositions What value do we deliver? Integrated, Adaptive Health: Offers a completely new way of analysing astronaut health by integrating physical exoskeleton data directly into a personalised mental well-being app, creating a closed-loop health platform. Physical Efficiency: Replaces bulky equipment (like ARED) with a smart, adaptive wearable exoskeleton, reducing required training time (currently 2+ hours daily) and improving efficiency. Counteracts muscle loss (up to 50% over a six-month mission) and bone density loss. Operational Savings: Saves time (leading to more research, rest, and productivity) and saves resources/space on the station (driving down cost). Mental Support: Integrates proven mental health tools (VR, Circadian Light Systems, Mindfulness Apps) into one adaptive system. Insight: Provides direct, invaluable insight into an astronaut's physical and mental health for both the user and ground stations.	Customer Relationships What type of relationship is established? Adaptive and Personalised: The system is user-centric, adapting resistance training and mental support based on real-time movement and sensor data feedback loops.	Customer Segments Who are we creating value for? Primarily the commercial spaceflight industry, where there is a clear market gap for integrated well-being systems. Also targets astronauts who are currently affected by severe physical and mental mission risks.
Cost Structure What are the most important costs? would include hardware development (exoskeleton, custom PCBs), software development, and ongoing research.	Revenue Streams How do we make money? B2B SAAS and hardware AAS			



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Strategyzer

strategyzer.com/innovation

BMC Component	Description	Source Reference
1. Customer Segments	Who are we creating value for?	
	Primarily the commercial spaceflight industry , where there is a clear market gap for integrated well-being systems. Also targets astronauts who are currently affected by severe physical and mental mission risks.	

BMC Component	Description	Source Reference
2. Value Propositions	What value do we deliver?	
	Integrated, Adaptive Health: Offers a completely new way of analysing astronaut health by integrating physical exoskeleton data directly into a personalised mental well-being app, creating a closed-loop health platform.	
	Physical Efficiency: Replaces bulky equipment (like ARED) with a smart, adaptive wearable exoskeleton, reducing required training time (currently 2+ hours daily) and improving efficiency. Counteracts muscle loss (up to 50% over a six-month mission) and bone density loss.	
	Operational Savings: Saves time (leading to more research, rest, and productivity) and saves resources/space on the station (driving down cost).	
	Mental Support: Integrates proven mental health tools (VR, Circadian Light Systems, Mindfulness Apps) into one adaptive system.	
	Insight: Provides direct, invaluable insight into an astronaut's physical and mental health for both the user and ground stations.	
3. Channels	How do we deliver the solution?	
	Delivery via the Halo Suite a professional product line-up consisting of Halo P (Physical, Exoskeleton), Halo M (Mental, Personalised Tool), and the central application where everything converges.	
4. Customer Relationships	What type of relationship is established?	
	Adaptive and Personalised: The system is user-centric, adapting resistance training and mental support based on real-time movement and sensor data feedback loops.	
5. Revenue Streams	How do we make money?	

BMC Component	Description	Source Reference
	B2B SAAS and hardware AAS	
6. Key Resources	What resources are essential?	
	Halo P: Exoskeleton and integrated sensors designed for wearable resistance training.	
	Halo M: Personalized software tool integrating validated mental health solutions.	
	Team Expertise: Strong skill set in robotics, usability, software development, and engineering, supported by a track record of competition wins and prototype building.	
7. Key Activities	What essential actions must we perform?	
	Interdisciplinary Synergy: Combining cutting-edge robotics (hardware) with the latest AI tools (software).	
	Developing Feedback Loops: Building the necessary infrastructure (PCBs, software) for seamless integration between the hardware and software systems.	
	Innovation and Research: Building on concepts already backed by research (VR, light therapy, X1 exoskeleton concepts) and refining them into a scalable, unified system.	
8. Key Partnerships	Who do we need to work with?	
	Partnerships are needed to leverage existing space medicine research and concepts (e.g., concepts proven by NASA and ESA). The focus on commercial spaceflight implies potential partnerships with private companies in that sector.	
9. Cost Structure	What are the most important costs?	
	would include hardware development (exoskeleton, custom PCBs), software development, and ongoing research.	

The Business Model Canvas

Designed for:

Designed by: Bhopinder Singh,
Jakob Gutersohn, Valéry Piot und David Bänzinger

Date: 05.10.2025

Version: 2

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Storyline

1. Zarya

Explanation: The first segment of the ISS launches: The Zarya Control Module launched aboard a Russian Proton rocket from Baikonur Cosmodrome, Kazakhstan. Zarya (translated to "sunrise") supplied fuel storage, battery power and rendezvous and docking capability for Soyuz and Progress space vehicles.

Quiz: In what year was it launched into space? → Multi Choice → November 20, 199



1. Destiny Laboratory

Explanation: Research Laboratory for U.S., supporting a wide range of experiments and studies contributing to health, safety, and quality of life for people all over the world. Destiny, the U.S. Laboratory module, becomes part of the station. The lab—that increased onboard living space by 41%—continues to be the primary research laboratory for U.S. payloads.

Quiz:

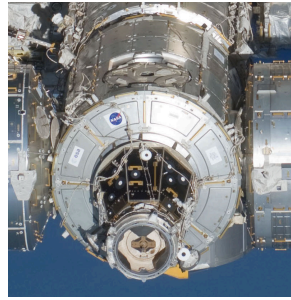


1. Harmony

Explanation: Harmony acts provides Living and working space for astronats, acts as passageway to internal lab modules and offers docking ports for commercial crew and cagro vehicles. The Harmony node, delivered to the ISS in October 2007, serves as a central connecting hub for international labs and cargo spacecraft. It provides essential life-support utilities—air, power, and water—and distributes resources to the Destiny, Columbus, and Kibo laboratories. Harmony also expands living and working space and acts as a platform for the Canadarm2 robotic arm.

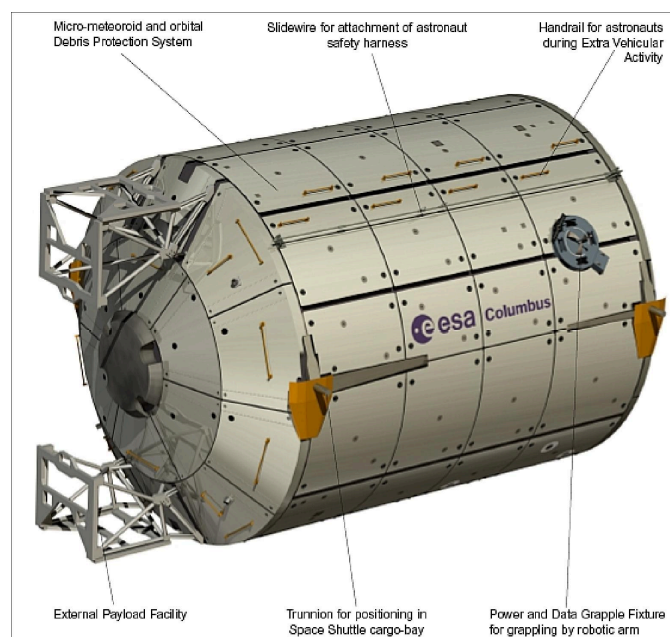
Quiz: Which U.S. spacecraft docks here? → Dragon





1. Columbus Laboratory

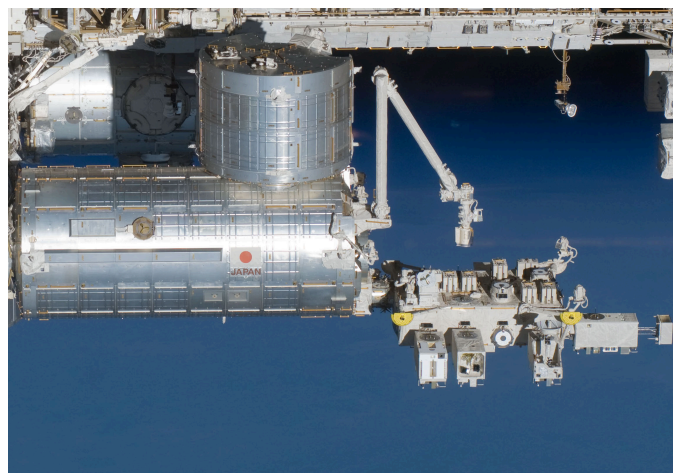
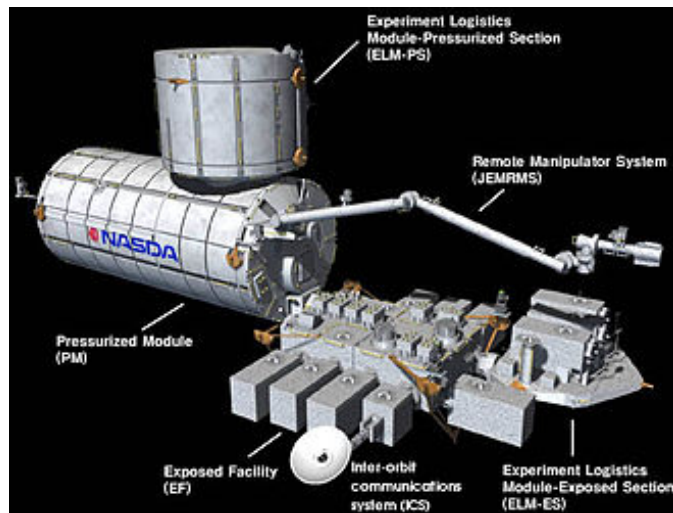
Explanation: ESA's module allows station crew members to conduct a wide variety of research in a **weightless** environment. The Columbus laboratory has room for ten internationally standardised racks to accommodate experiment equipment – eight payload racks in the sidewalls and two in the 'ceiling'. These racks are tailored to squeeze the maximum amount of research from a minimum of space, shared by ESA and NASA.



1. Kibō

Explanation: Japanese Experiment Module Kibo for "hope" is a space research facility enabling astronauts to investigate a variety of space phenomena. Experiments range from biology, physics, technology and more. Kibo also provides an airlock allowing experiments to be exposed to the vacuum of space. Kibo is the largest module of the ISS. It is composed of four main elements.

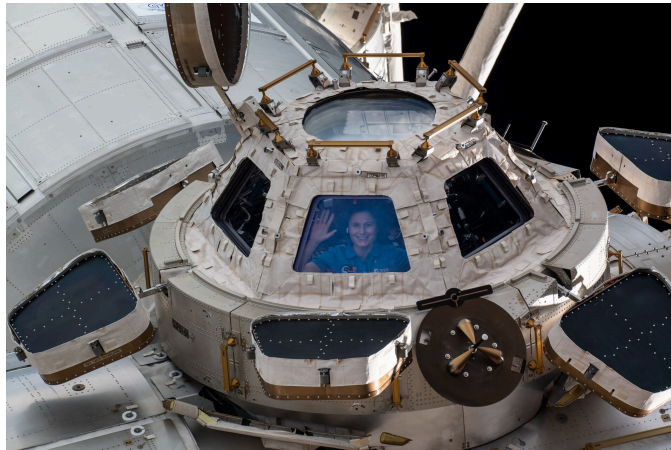
Quiz:



1. Cupola

Explanation: Also called International Space Station's "window of the world". The cupola is a small module designed for the observation of operations outside the station such as robotic activities, the approach of vehicles, and spacewalks. Its six side windows and a direct nadir viewing window provide spectacular views of Earth and celestial objects. The windows are equipped with shutters to protect them from contamination and collisions with orbital debris or micrometeorites. The cupola house the robotic workstation that controls the Canadarm2.

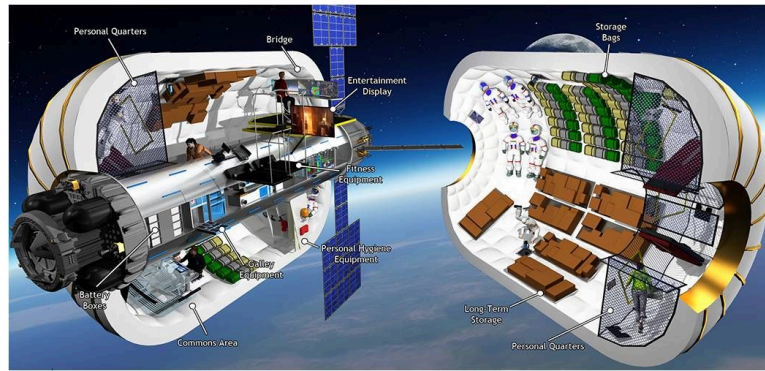
Quiz:



1. Bigelow Expandable Activity Module

Explanation: The Bigelow Expandable Activity Module (BEAM) is an expandable habitat technology demonstration for the International Space Station. Expandable habitats greatly decrease the amount of transport volume for future space missions. These "expandables" require minimal payload volume on a rocket, but expand after being deployed in space to potentially provide a comfortable area for astronauts to live and work. They also provide a varying degree of protection from solar and cosmic radiation, space debris, atomic oxygen, ultraviolet radiation and other elements of the space environment.

Quiz:



Neutral Buoyancy Laboratory (rein wichtig steht in aufgaben



Q&A

▼ Ort, Zeitablauf

4.-5. Oktober

Samstag 8.00 - Sonntag 18.00 - 34h

Technopark Luzern - Google Maps

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- **Free food & drinks** throughout the event.
- Don't forget to bring your **working materials** (laptop, chargers, etc.)!

▼ Mitnehmen

Alles was man für 36h, eine Nacht und zum arbeiten braucht

→möglichst in einem Rucksack so dass man mobil ist!

absolut nötig:

- Computer, Netzteil, Maus
- Handy, Ladegerät
- Kopfhörer - Hackathons können laut sein!!
- Medis
- Zahnbürste, Zahnpasta

optional:

- Schlafsack - falls du lang schlafen willst...
- Duschzeug - falls du duschen willst...
- Kleider
- Food - hat aber auch vor Ort gratis

- etc.

▼ Regeln - Was darf vorher programmiert werden?

laut ChatGPT:

✅ What's Allowed

- **Pre-hackathon research and planning:** You can brainstorm ideas, form your team, explore datasets, and sketch out concepts.
- **Tool setup and onboarding:** Installing libraries, setting up repos, testing APIs—go for it.
- **Learning and prototyping:** You can experiment with technologies or build small test components that might help later.

🚫 What's Not Allowed

- **Submitting pre-built solutions:** Your final submission must be built during the hackathon window (Oct 4–6 globally).
- **Reusing old projects:** You can build on prior knowledge, but the actual solution must be new and tailored to this year's challenge.

▼ Hackathon Tipps/Hacks

▼ realistisches Zeitmanagement

Damit rechnen dass man im Verlauf des Hackathons immer langsamer arbeitet wegen der Müdigkeit - Auch individueller Faktor einberechnen, Deshalb Aufgaben auf mehrere Personne aufteilen, besonders gegen Ende

▼ Dokumentation, Video und andere Abgaben

genug früh anfangen, spätestens 6h vor der Abgabe, Zeit nicht unterschätzen, besonders Dokumentation kann sich ziehen

Dokumentation:

Beispiel Aufbau:

Inhalt

Titelseite 1

Das Problem

..... 3

Unsere Lösung

.....	3
Unsere Technische Lösung	
.....	4
(Ein spezifisches Detail der Technischen Lösung)	
.....	5
Diagramm oder Abbildung	
.....	6
Struktur (z.b. Backend Frontend API)	
.....	6
Übersicht verwendeter Technologien	
.....	7
Applikation erklären	
.....	7
Wieso unsere Lösung wichtig ist	
.....	8
Team	
.....	8
Quellen und	
Links.....	9

Bärnhackt 2. von 35:

[attachment:b0e08505-6261-4ba3-ac83-04d90637f2be:Technische_Dokumentation_Kirchenfeldrobotics.pdf](#)

Swiss{ai}weeks 1. von 10:

[attachment:d3506303-d826-448b-87b0-de981e8fbd2c:documentation_farmly_by_kirchenfeldrobotics.pdf](#)

▼ Pitch

Beim Pitch wird die Lösung dem Publikum präsentiert, dies ist ein grosser Teil des Hackathons, deshalb einige Tipps:

Menschlich/Zeitlich:

- vor dem Pitch genug Zeit - 1h vor dem Pitch Zeit für sich haben wegen Nervosität
- keine Angst vor fail - auch wenn der Pitch extrem viel zählt kann es halt einfach passieren dass etwas schief läuft...
- genug Schlaf - Die Person die pitcht muss mit hoher Priorität genug schlaf haben, sonst wird das präsentieren schnell sehr schwierig - mind. 2h schlaf

Nervosität:

- nicht zu viel koffein aufgrund nervosität
- Nervosität - genug schlaf und mehrere Durchgänge vor dem Pitch helfen sehr die Nervosität herunterzubrechen - oft präsentiert man vor grossem Publikum (>200)

Technisches:

- Computer neustarten - immer vor dem Pitch Computer neustarten und alle Apps schliessen, an diesem Punkt läuft der Computer meist schon seit >48h...
- Vor dem Pitch den Anschluss an dem Beamer prüfen!!

Präsentation:

- keine Livedemos!! - geht immer schief, lieber ein Video
- Immer ein Witz und eine Publikumsinteraktion einbauen
- Teamvorstellung am Ende, da optional und Zeit
- Folien und Thema kennen und frei sprechen - anstatt Bulletpoints mit eingeübtem Text
- Nutzen steht im Fokus, danach die Lösung mit Interface usw