

The background of the image is a composite of a blue starry space scene and a reddish-orange Mars surface. An astronaut in a full space suit is positioned in the upper center, appearing to be on the Martian surface. A white rocket icon is placed vertically between the letters 'P' and 'I' of the word 'EPIC'.

EPIC

CHALLENGE JNS

Fishbone Bullet Point Diagram

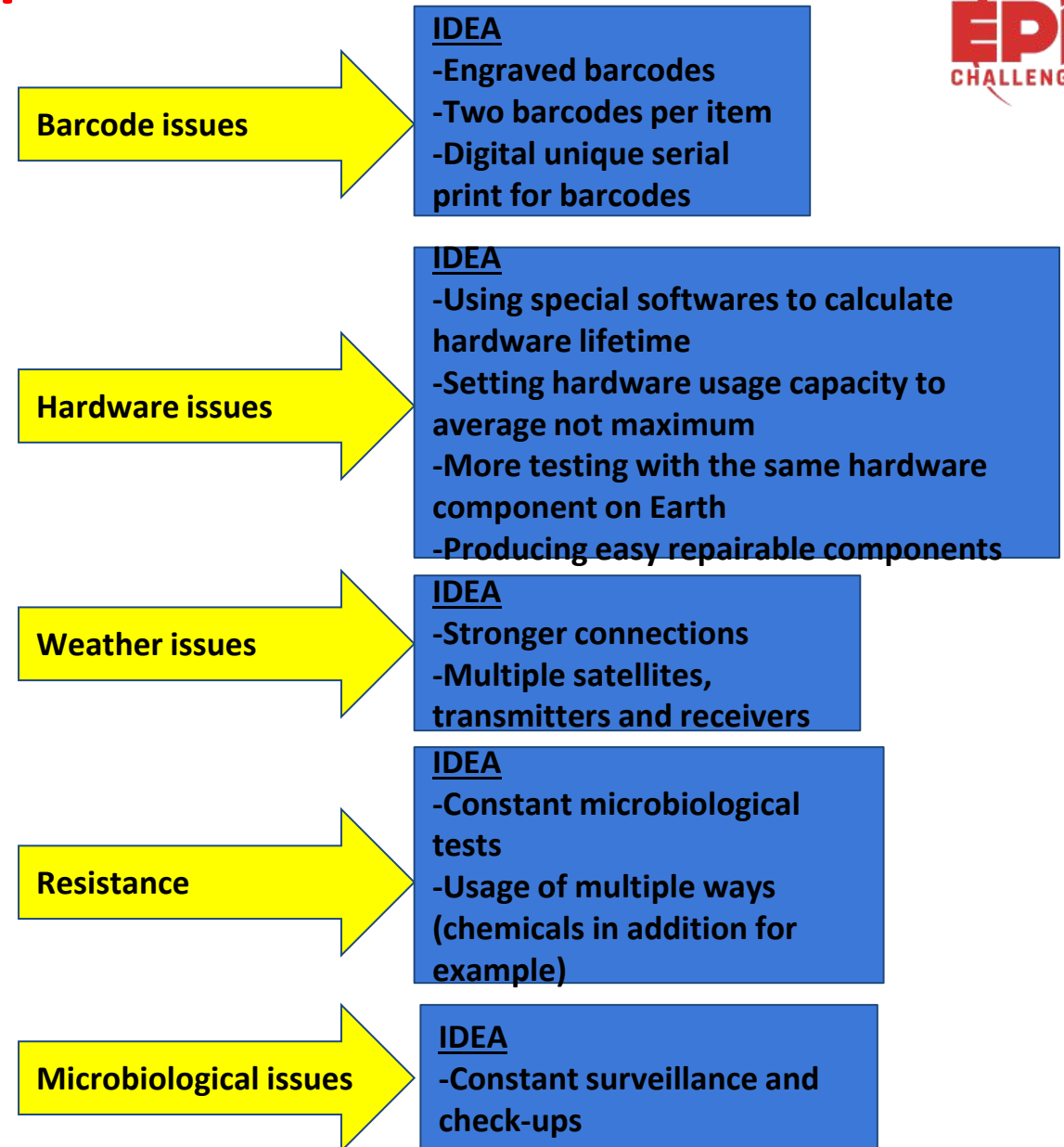
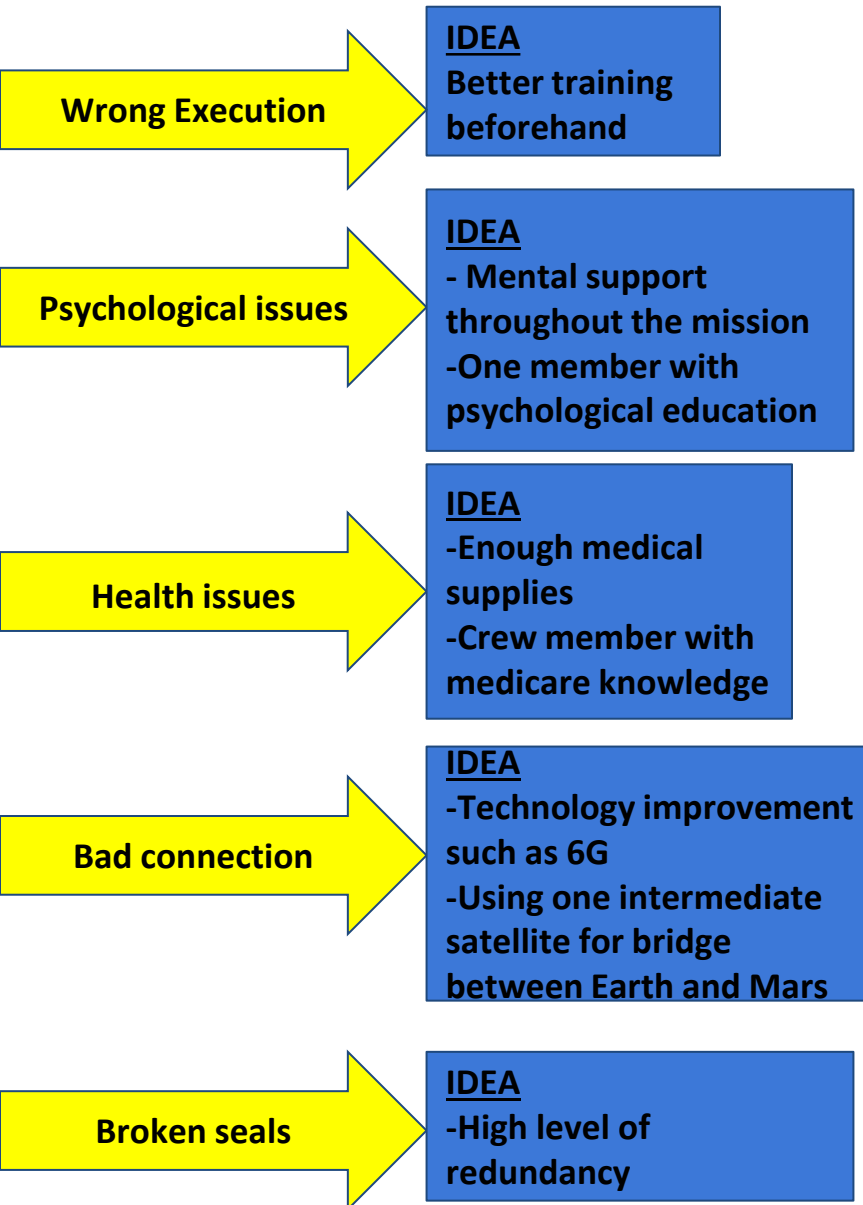


- ❖ People
 - Wrong execution
 - Bad understanding
 - Not enough knowledge
 - Wrong instructions because people on earth can't relate
 - Wrong calculations during simulations
 - Psychological issues
 - Feeling alone in Mars
 - Not being able to adapt into simulations
 - Health issues
 - Not enough medical equipment and medicine
 - Lack of healthcare/medicare person
- ❖ Equipment
 - Bad connection
 - Different angles for satellite
 - Weather issues of planets
 - Video of problem cannot be send to earth
 - Broken seals
 - Doors cannot be opened and/or closed
 - "Opening doors" could lead to exposure of the whole facility
 - Barcode issues
 - Barcodes are worn out/not readable
 - wrong entry into archive
 - Hardware issues
 - Dysfunctional hardware after update
 - Worn out after hardware lifetime limit
 - Repair is impossible - total replacement
- ❖ Environment
 - Weather issues
 - Sandstorms on Mars
 - Weather problems on Earth (clouds, hurricane,...)
 - Resistance
 - Viruses/Bacteria develop resistance
 - Microbiological issues
 - Unknown microbiological organisms sticking to spacecraft
 - Unknown side effect of microbiological organisms

Concept

Video-Simulation for same situation-2d barcode alphanumeric-Xr/Vr instructions-Mars Environment

Concept Improvement



Concept Document

Problem and Idea Title

Developing a system for solution of an unexpected issue -
VR Instructions

Author

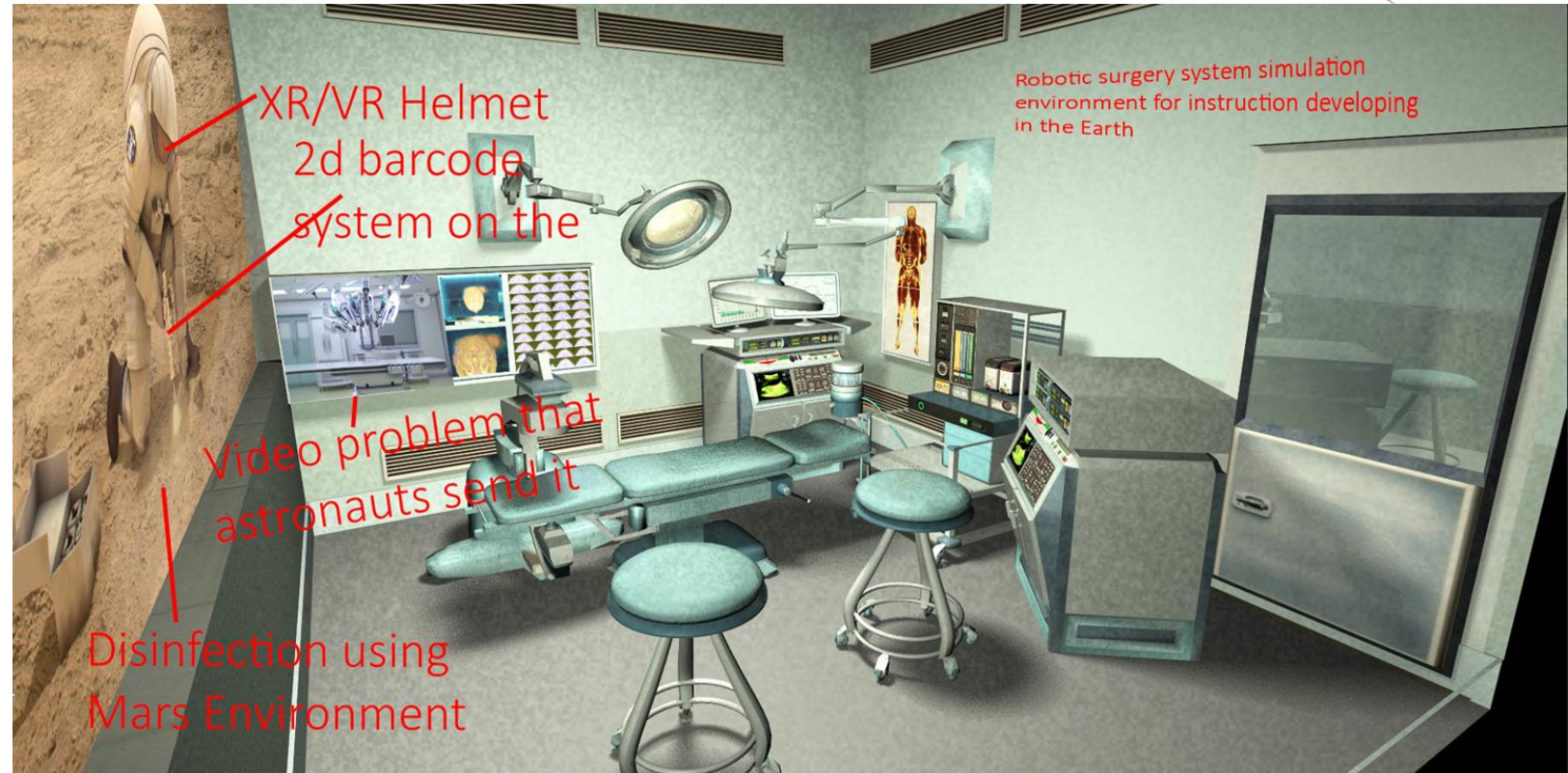
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Description

After sending videos of the issues that occurred after using the surgical robot system to Earth, scientists on Earth develop a strategy to repair the robotic surgery system by doing simulations on computers or with proper duplicates of the robotic system on Earth. Then they create instructions for the crew on Mars that can be viewed with VR glasses so that even persons with not sufficient knowledge can understand it. All needed parts and tools for the repair will be labeled with barcodes. To avoid mix-ups every item has two barcodes that are, if possible, engraved. To ensure a safe environment for operations the robot and the OR get disinfected by using Mars' cold temperatures. All viruses and bacteria will be killed when in contact with the cold (-80°C even during summer).

1. Sending video about emergency robotic surgery system
2. Using simulations to develop instructions for repairing the robotic surgery system
3. Connecting to VR glasses for applying the instructions
4. 2d barcode system for identifying parts and tools
5. Using Mars's conditions to disinfect the equipment

Illustration with Keywords



PS: Illustration is our creation with using different design tools

Please, visit for references of this document.