

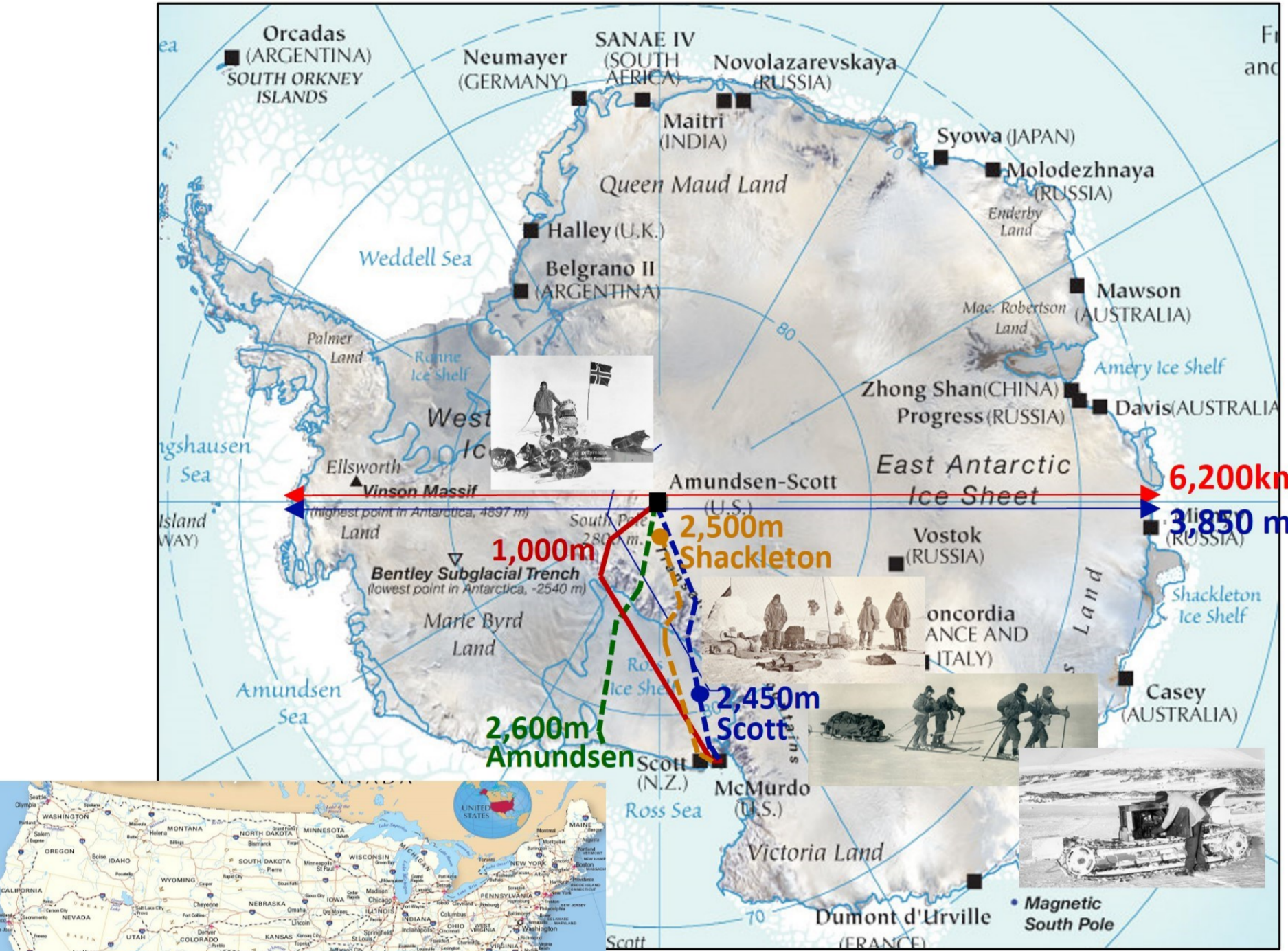
Lunar Infrastructure & Resource Development.

Douglas Morrison & Dale Boucher
CEMI-MICA & Interstellar Mining,
Toronto, Canada.

dmorrison@cemi.ca dboucher.deletion@gmail.com

Antarctic Adventures

Minimal Logistics 1901-1922



Scott Hut 1912



Antarctic Infrastructure

Systemized Logistics 1955-2024

Planned Infrastructure

McMurdo Station Built Infrastructure

Amundsen-Scott Base (S. Pole)



MICA ACIM
Mining Innovation Commercialization Accelerator
Accélérateur de Commercialisation d'Innovation Minière

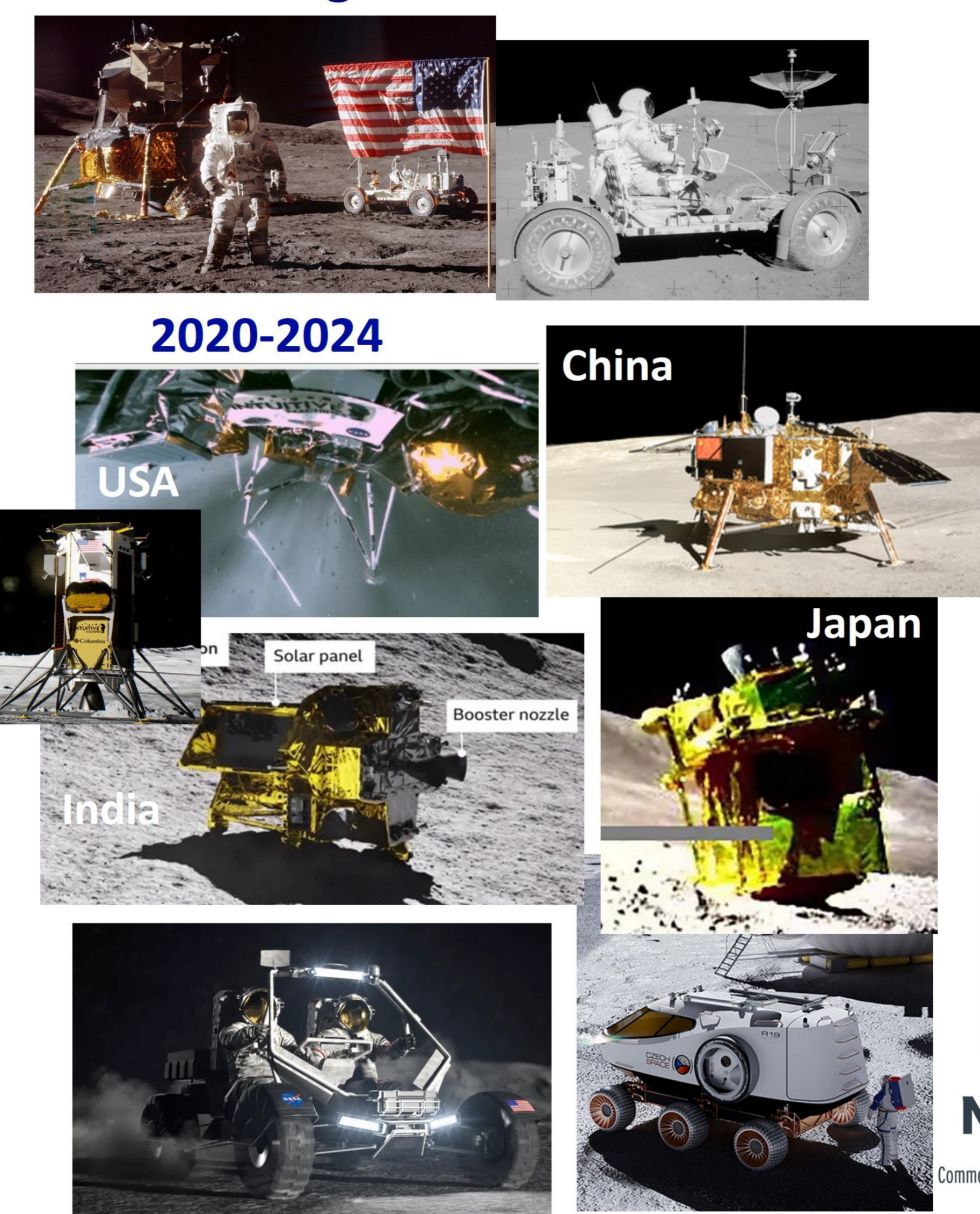
Managed by CEMI

CEMI
Centre for Excellence in Mining Innovation

Lunar Adventures

Minimal Logistics 1962-1972

2020-2024



USA

China

Japan

India

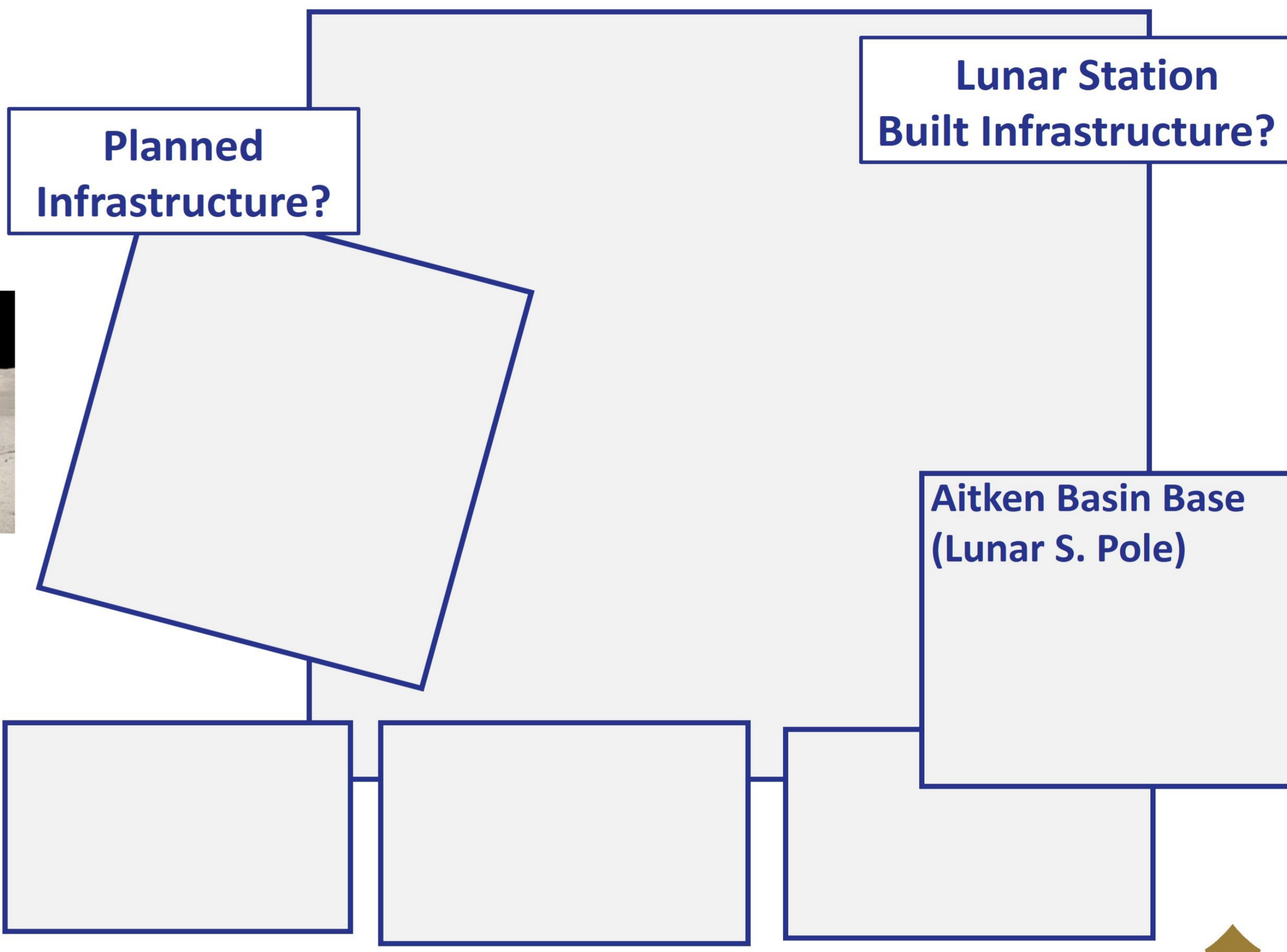
Lunar Infrastructure?

Systemized Logistics 1962-2024

Planned Infrastructure?

Lunar Station Built Infrastructure?

Aitken Basin Base (Lunar S. Pole)



MICA ACIM
Mining Innovation Commercialization Accelerator
Accélérateur de Commercialisation d'Innovation Minière

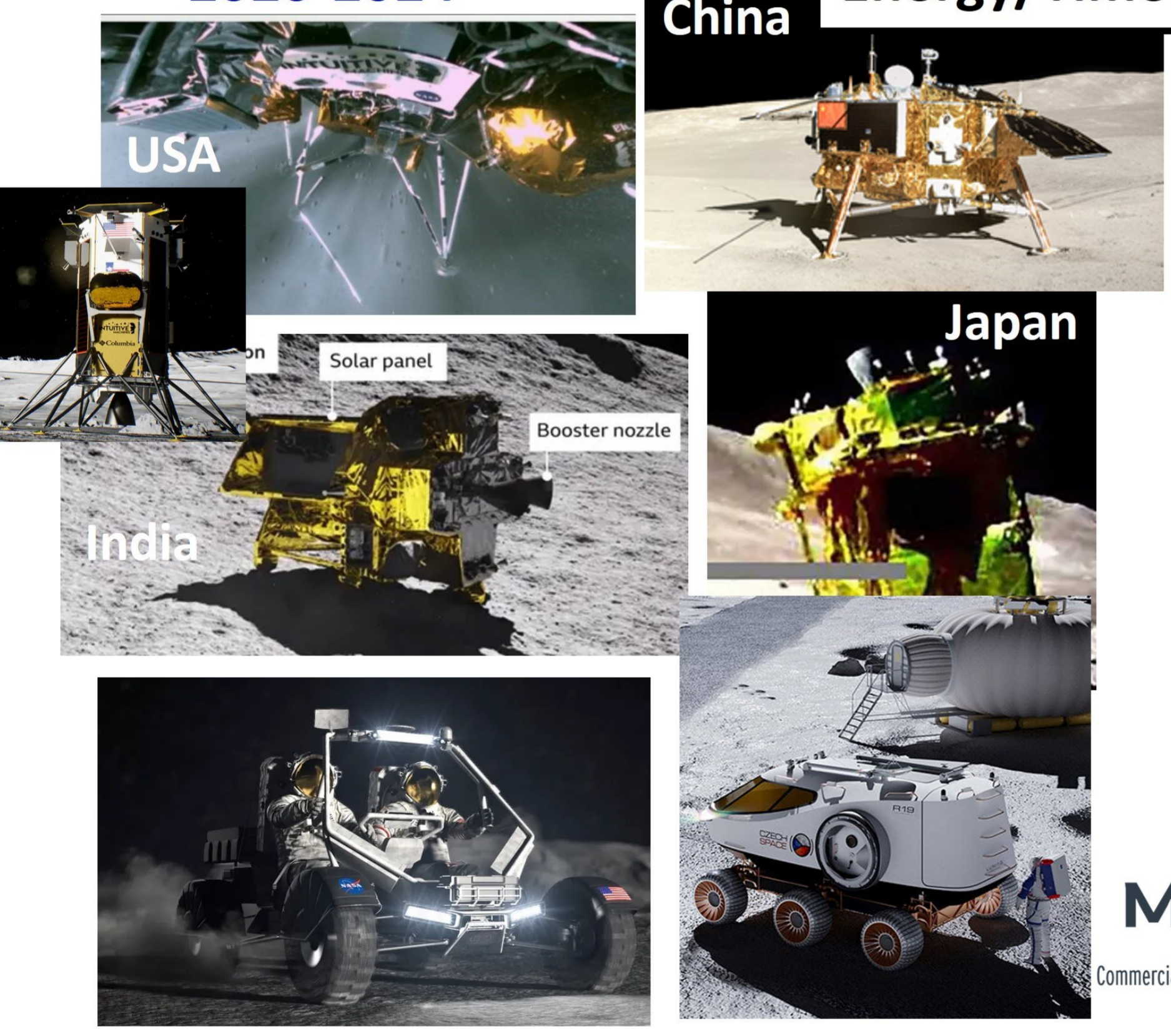
Managed by CEMI

CEMI
Centre for Excellence in Mining Innovation

Lunar Adventures

Minimal Logistics 1962-1972

2020-2024



USA

China

Japan

India

Lunar Infrastructure?

Systemized Logistics 2024-2034?

NOT this: Complex, Ineffective Energy/Time

Operational Target:

1. Re-usable Land/TO Facility (RLTO) - lunar bedrock.

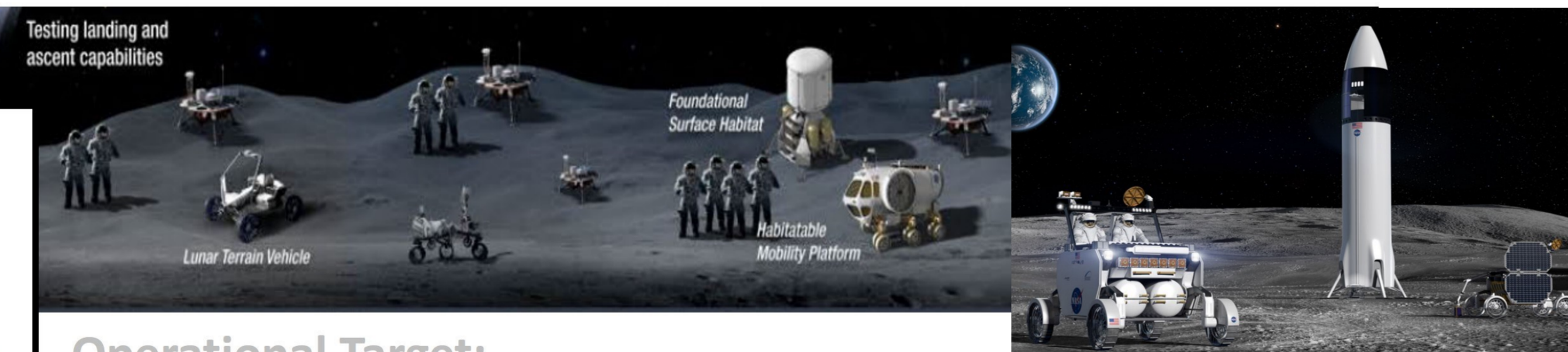
Auto. Units

A. Clear Regolith: Capture, Sort & Package

B. Regolith Storage & Barrier Deployment

C. Groom Bedrock Surface + Capture/Store Debris

D. Site Stockpile & Transport Facility.



MICA ACIM
Mining Innovation Commercialization Accelerator
Accélérateur de Commercialisation d'Innovation Minière

Managed by CEMI

CEMI
Centre for Excellence in Mining Innovation

Lunar Infrastructure & Resource Development - Autonomously

NOT this: Complex, Ineffective Energy/Time

Lunar Applications

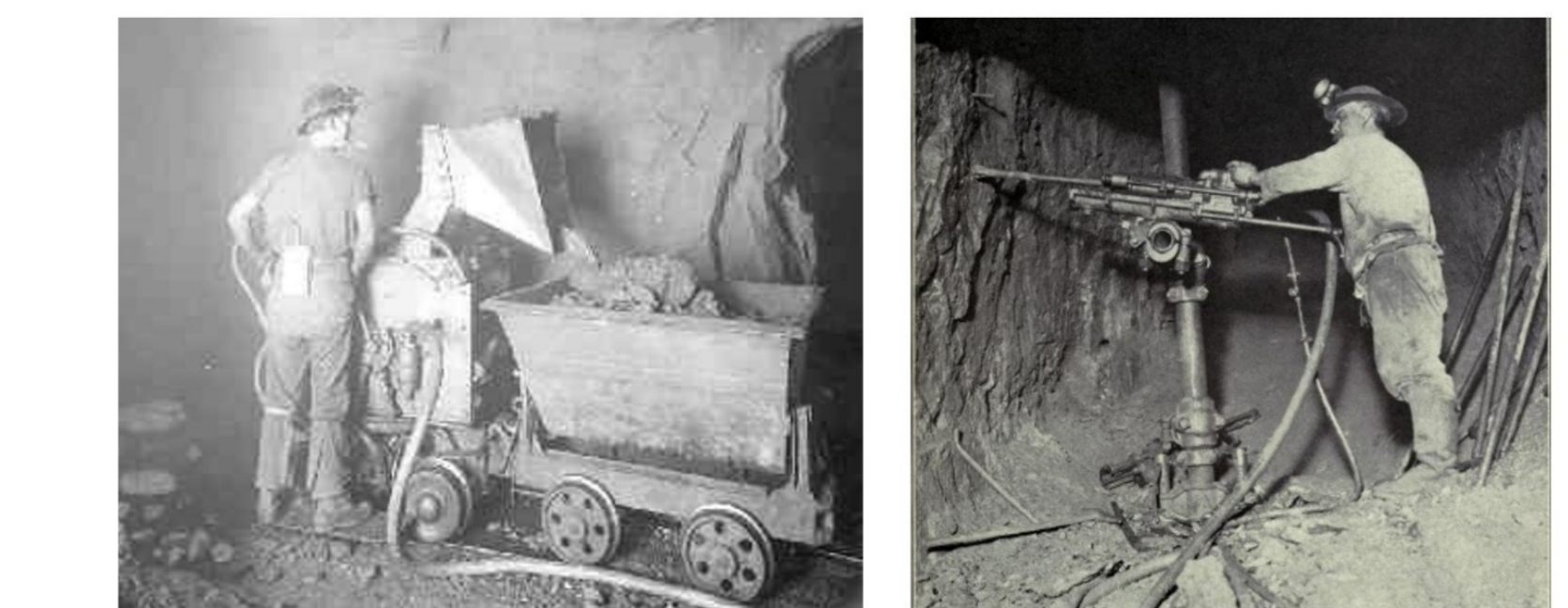
Simple, Robust, Effective, Electric

Modular & 90% Lunar Replaceable

Single-task, Autonomized/Robotic

Quasi-continuous Processing

LOS & LTE Telecomm Systems



Lunar Infrastructure?

Systemized Logistics 2024-2034?

Operational Target:

1. Re-usable Land/TO Facility (RLTO) - lunar bedrock.

Auto. Units

A. Clear Regolith: Capture, Sort & Package

B. Regolith Storage & Barrier Deployment

C. Groom Bedrock Surface + Capture/Store Debris

D. Site Stockpile & Transport Facility.

CEMI-MICA & Client Approach: (LAIRD)

Lunar Autonomous Infrastructure & Resource Development

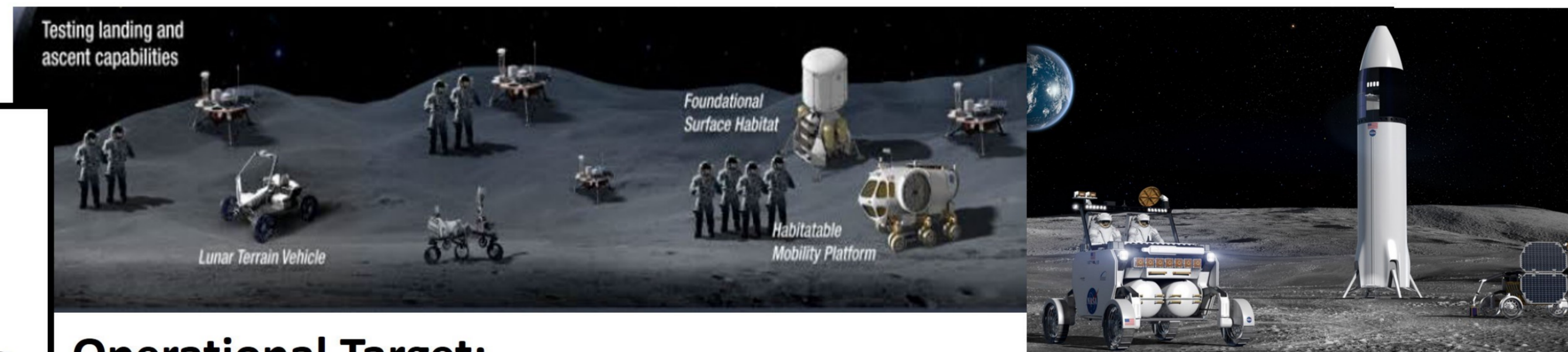
1. Regolith/Ice Capture, Sort & Package (CaSP)

2. Recovery Drill System (RDS): any diam., length & orientation

3. Bedrock Grooming, Trenching & Tunnelling Systems (GTTS)

5. Sub-surface Habitation, Refuge Facility & Vehicle Storage (SHRF)

6. Overland Alternative Transport System (OATS)



MICA ACIM
Mining Innovation Commercialization Accelerator
Accélérateur de Commercialisation d'Innovation Minière

Managed by CEMI

CEMI
Centre for Excellence in Mining Innovation