RELIABILITY CENTERED MAINTENANCE: Designing for Sustainability

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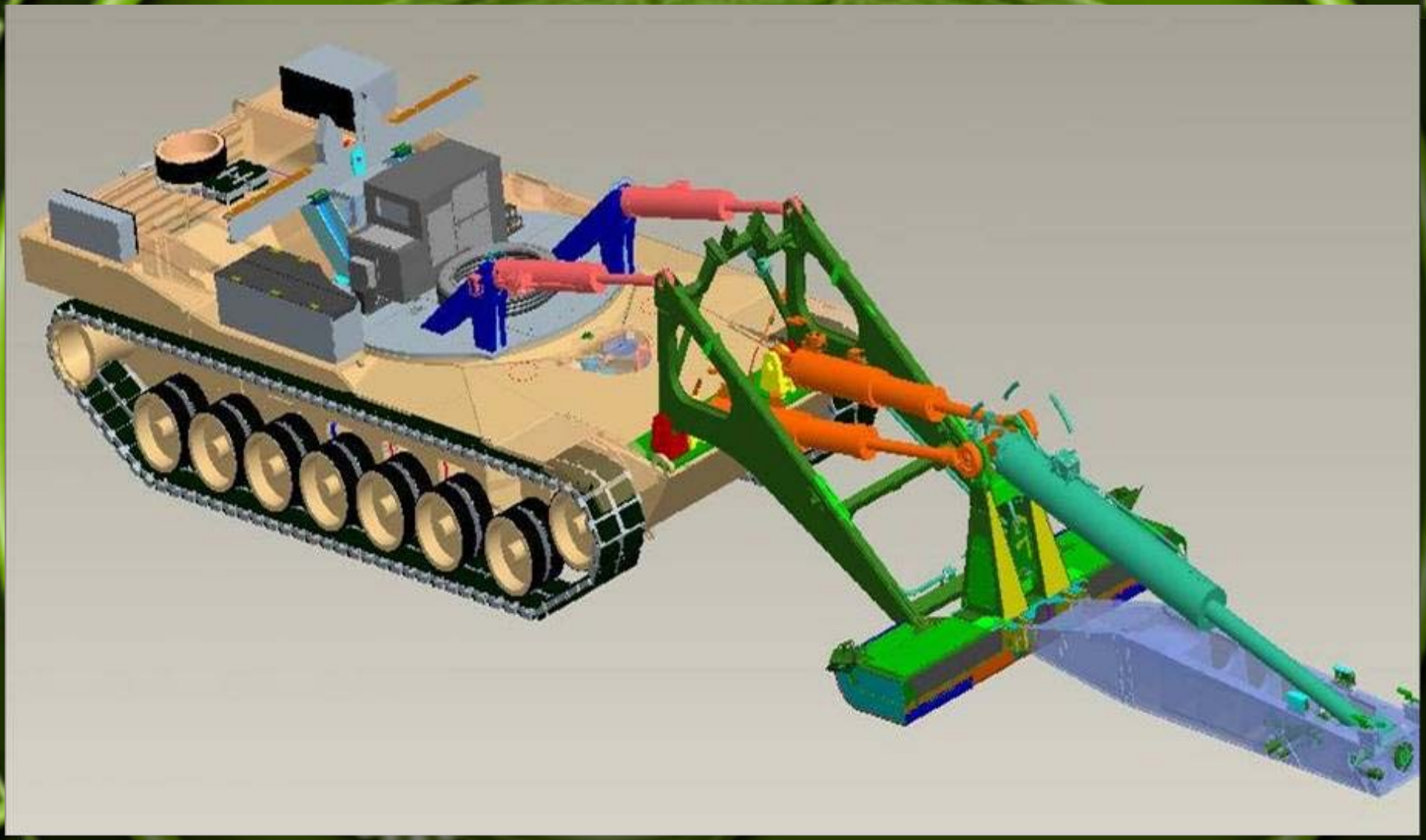
PM RCM
SME Maintenance Planning
SME Design Interface

PURPOSE

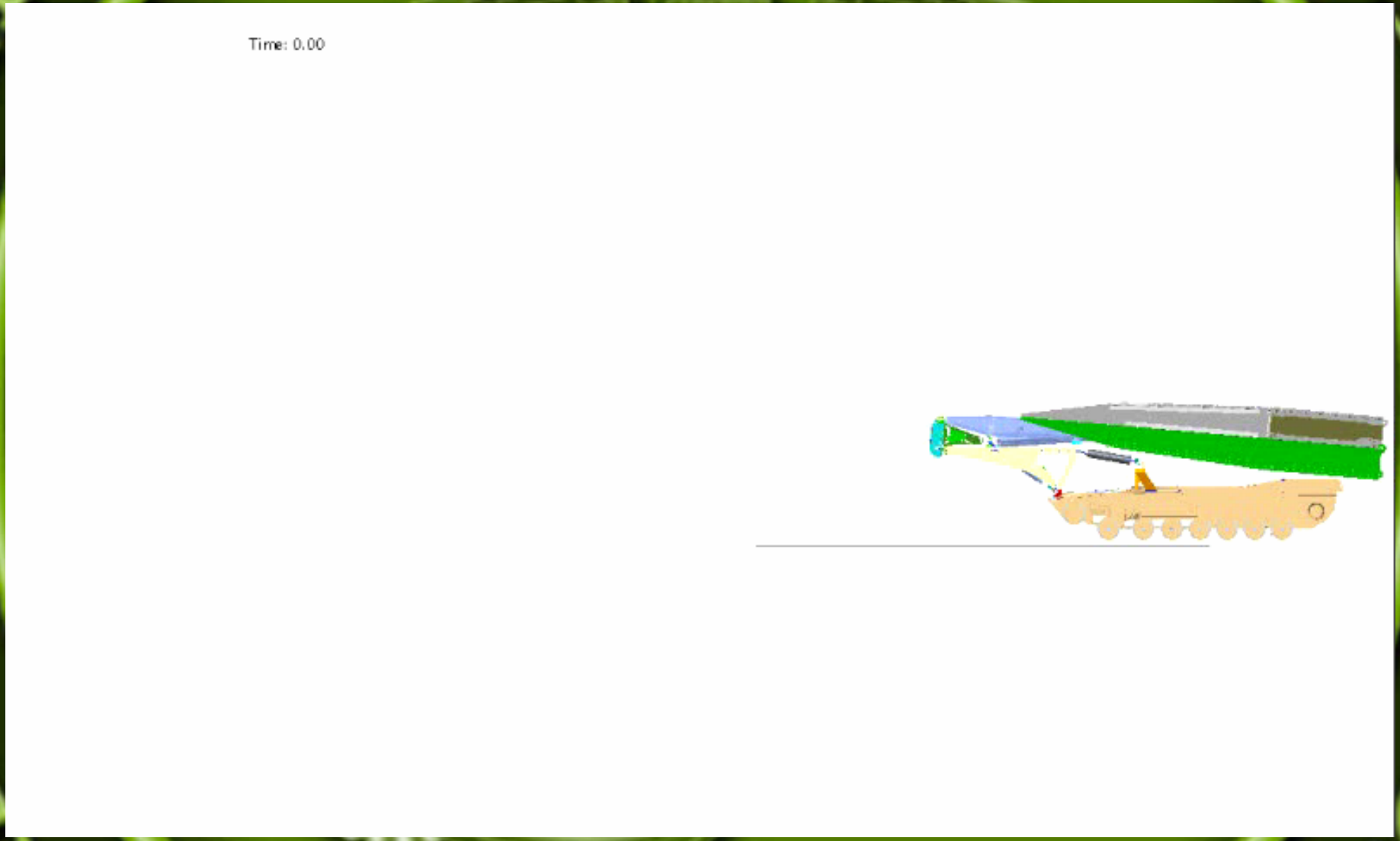
- Application of Reliability Centered Maintenance (RCM) on Joint Assault Bridge (JAB) to design in sustainability

JOINT ASSAULT BRIDGE



STRATEGIC MAINTENANCE SOLUTIONS

JOINT ASSAULT BRIDGE



STRATEGIC MAINTENANCE SOLUTIONS

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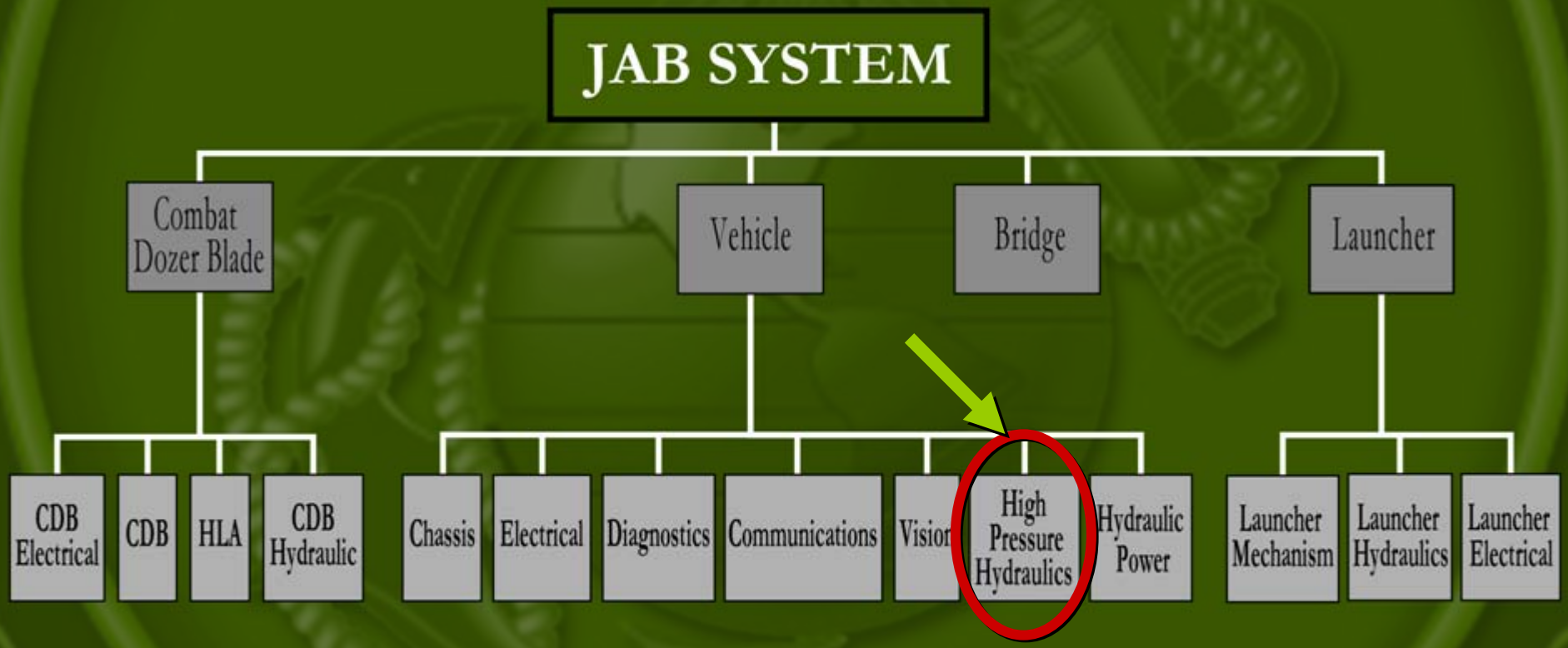
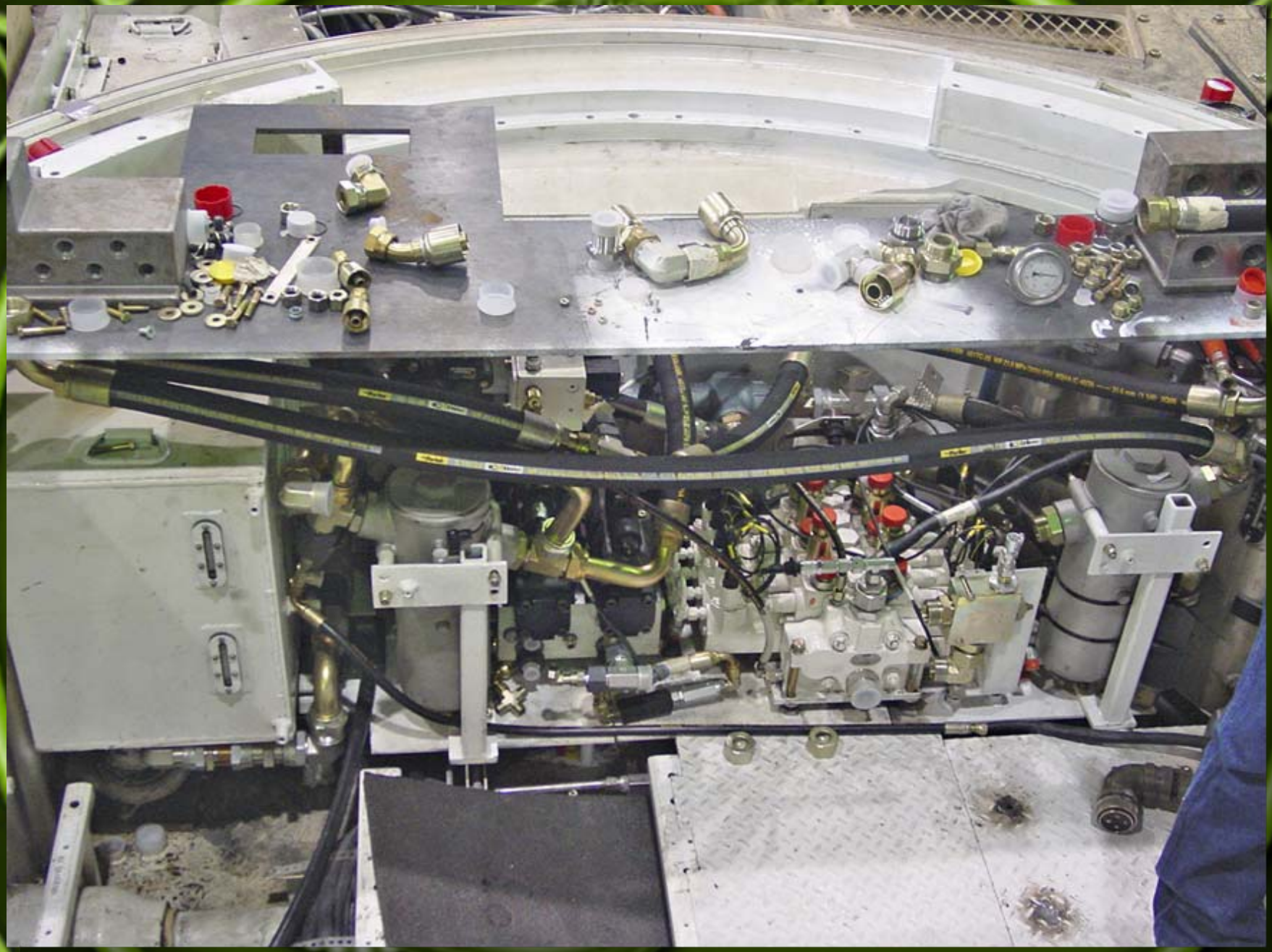
RCM Impacts JAB Design

- System design
- Logistics Support architecture
- Marine Corps approach to RCM process

WORK BREAKDOWN STRUCTURE

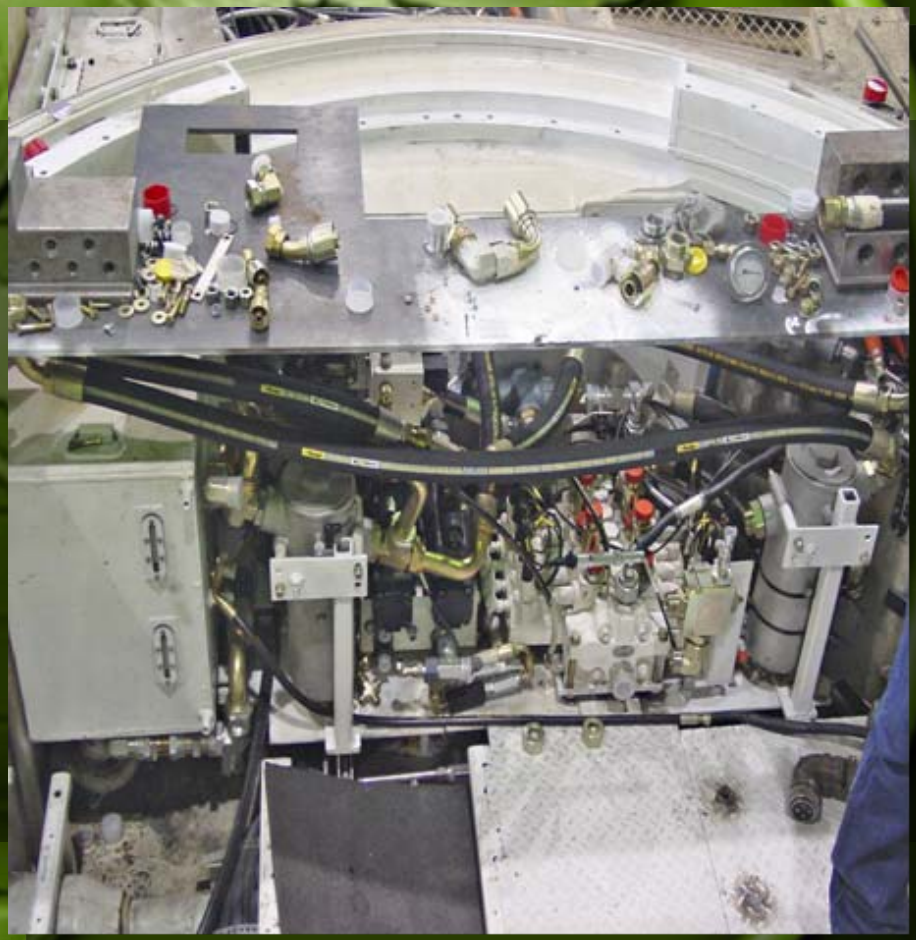




STRATEGIC MAINTENANCE SOLUTIONS

HIGH PRESSURE HYDRAULICS

- Failure Effect:
  - A low pressure condition in hydraulics causes cavitation leading to total system failure
  - Safety Consequences
    - Redesign

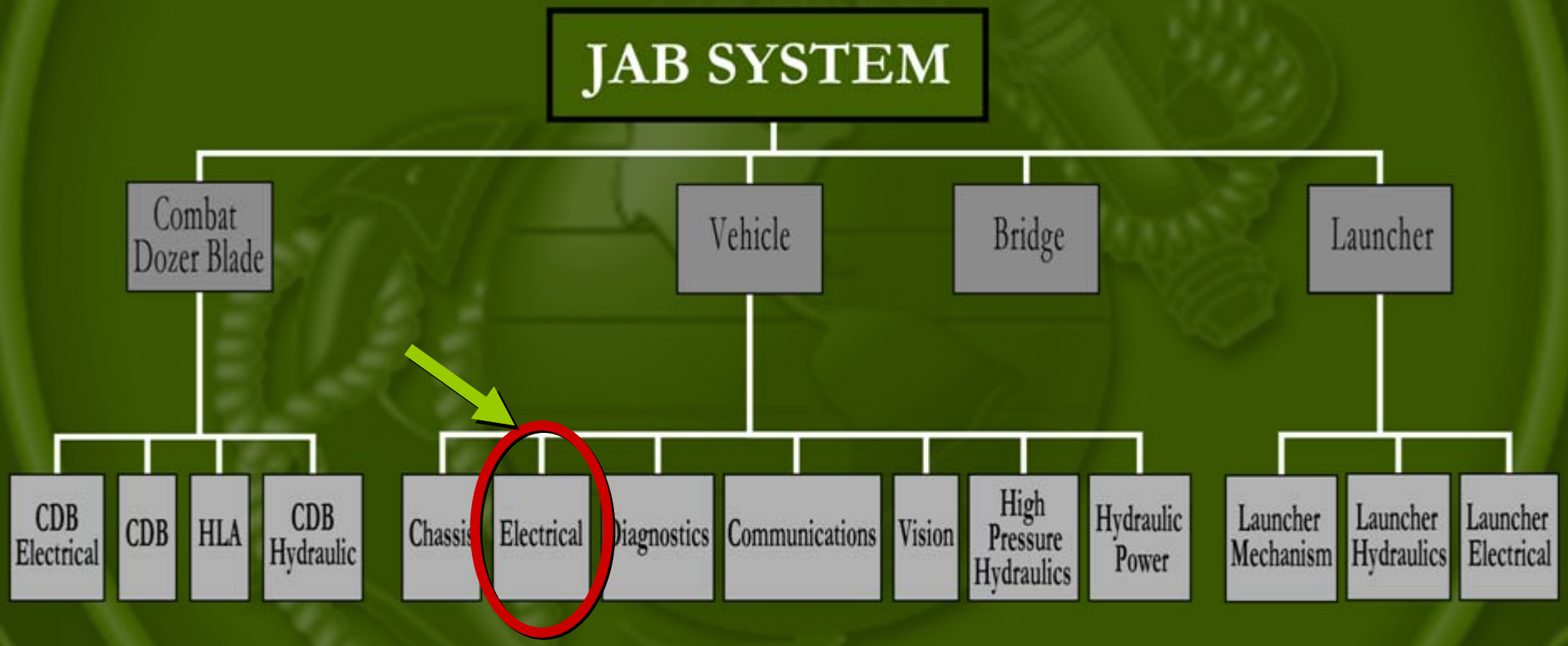


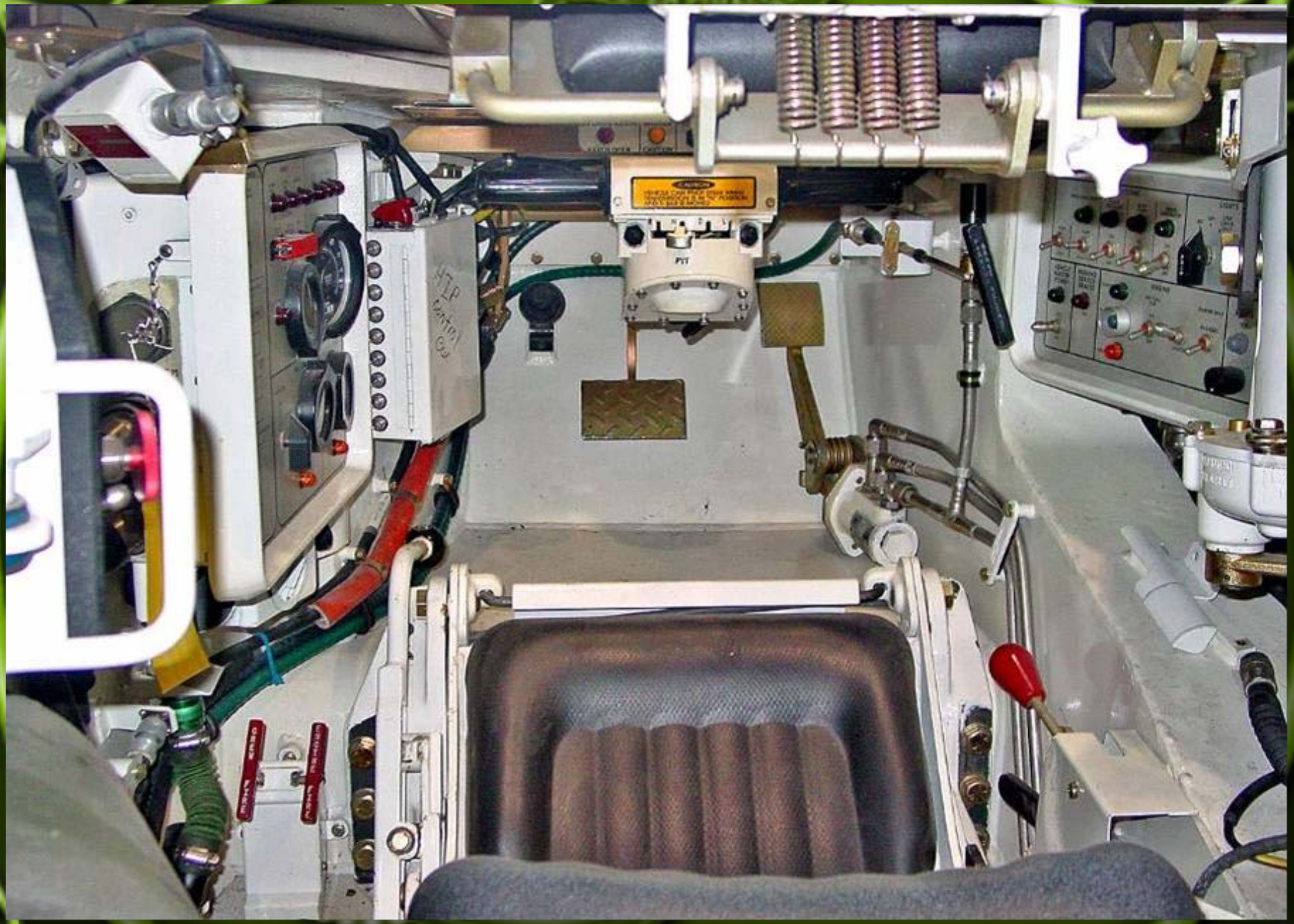
STRATEGIC MAINTENANCE SOLUTIONS

HIGH PRESSURE HYDRAULICS REDESIGN

- Resulting design change
  - Added a redundant auxiliary pump
  - Increased inherent reliability of the system

WORK BREAKDOWN STRUCTURE





STRATEGIC MAINTENANCE SOLUTIONS

STRATEGIC MAINTENANCE SOLUTIONS

ELECTRICAL SYSTEM REDESIGN

- Functional Effects
- Diversionary valve cable failure:
  - System suddenly became inoperative and bridging operations ceases.
  - Major troubleshooting required to identify problem.
  - Safety consequences
  - Redesign is compulsory

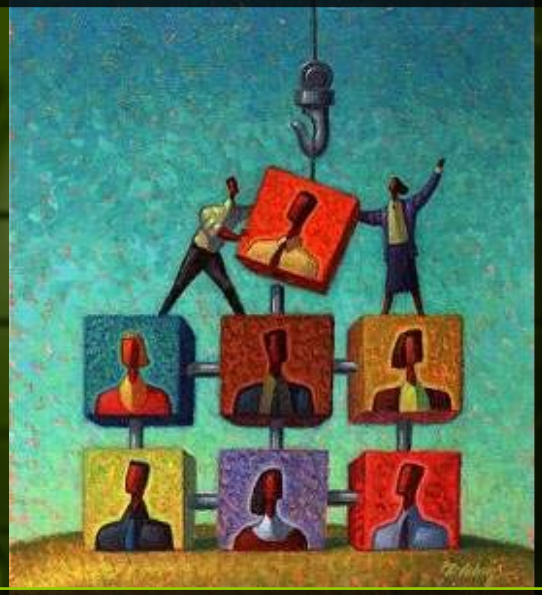
ELECTRICAL SYSTEM REDESIGN

- Resulting design change
  - Added Cable LED on HIP Control Panel
- Human Factors and Logistics Support Architecture
  - 75% reduction in time to diagnose.
  - Aided development of Tech Publications, Training, Support Equipment and ESOH.

Building Sustainability with RCM

Warfighter Requirements

facilitator



- Warfighter
- Maintainer
- PM
- Engineer
- LCL
- OEM

facilitator

Best Value Solution

RCM Outputs

Function Centered Analysis

Maint/ Support Strategy

Human Systems Integration

COTS

Process Policy Procedure

Prognostics Diagnostics

Operating Procedures

Design in Reliability

Capability

Requirements

RCM Champion

RCM Training Path

Introductory 3 Day Basic Course	10 Day Facilitator Course	Mentoring with RCM Practitioner

Participate in RCM Analyses

Facilitate RCM Analyses

15 day Practitioner Course

RCM Champion/Practitioner

QUESTIONS?