This Directed Acyclic Graph and write-up is an excerpt from a larger NASA document.

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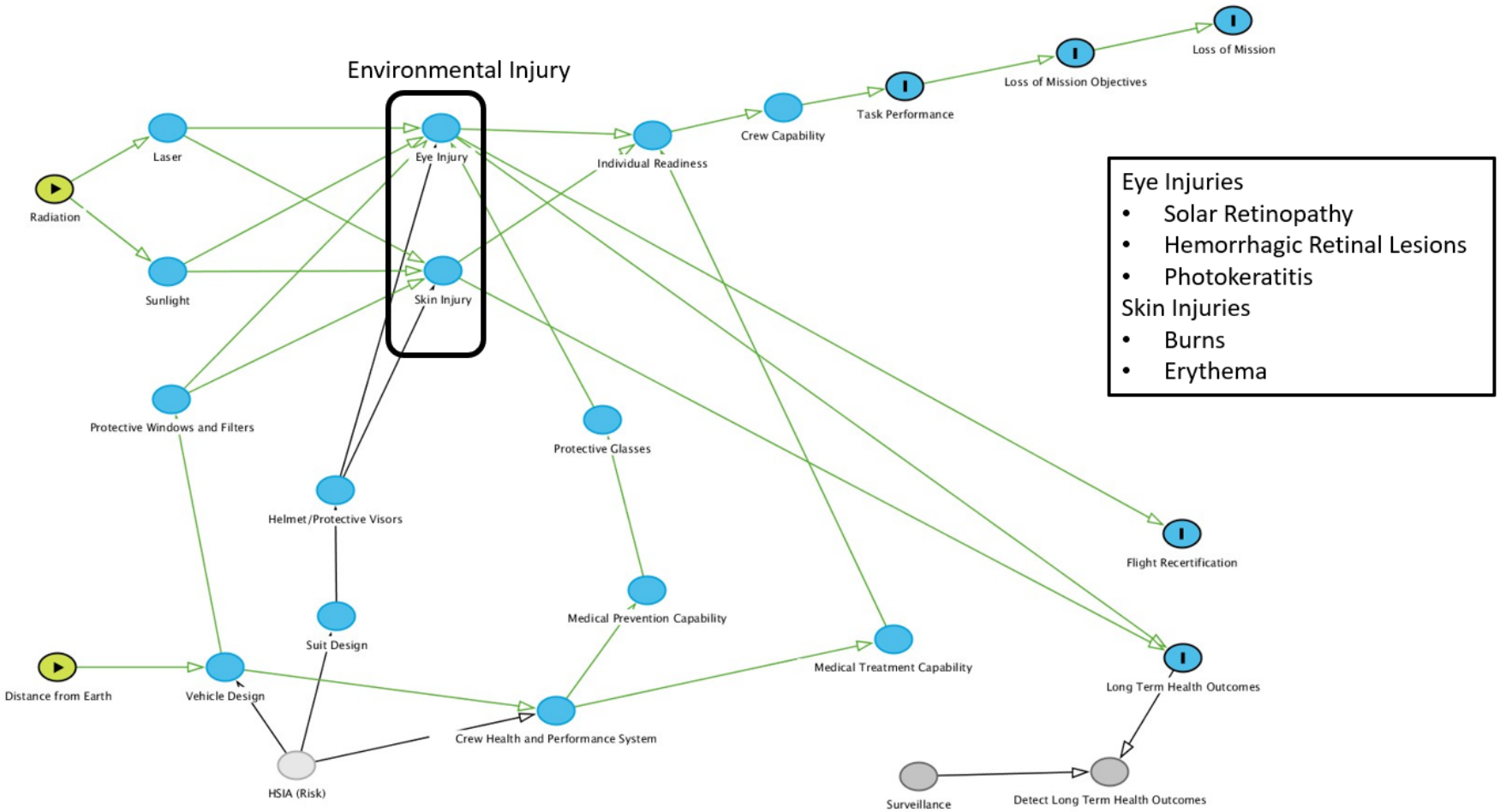
Directed Acyclic Graphs: A Tool for Understanding the NASA Spaceflight Human System Risks

Human System Risk Board

October 2022

Risk of Adverse Health Outcomes and Performance Decrements resulting from Non-Ionizing Radiation during Spaceflight (Non-Ionizing Radiation Risk)



Non-Ionizing Radiation Risk DAG Narrative

- The central risk for Non-ionizing Radiation is in **Eye Injuries** and **Skin Injuries** that can result from **Sunlight** or **Laser Exposure**.
- If these occur, they can create functional impairments that affect **Individual Readiness** and **Crew Capability** in mission, especially in loss of vision.
- Protection from these exposures occurs through **Protective Windows and Filters** that are designed into the vehicle, **Helmet/Protective Visors** that are designed into the suits, and the provision of **Protective Glasses** for crew as needed.
- **Crew Health and Performance System -> Medical Treatment Capability** captures any treatments that need to be planned into the system, possibly including pain medications, ocular drops, skin creams for burns, etc.
- If **Eye Injuries** do occur from these exposures, then there is a chance that they will affect **Flight Recertification** of crew and possibly include **Long Term Health Conditions** like debilitating visual defects.