

# **NASA / Spear Enterprise LLC Joint Technical Report**

## **Adaptive Laser Communications for Space Networks – Final Report (Rev A)**

Date: October 12, 2025  
Report ID: SDC-COMMS-2025-ALC-001

Prepared by: Spear Enterprise LLC / NASA Collaboration

### **Routing Memo**

TO: ATB Board (SYS-SAFE, ICS-SEC, RELIAB, HFX, STRUCT)  
CC: ARCHITECT, MECHWORK, MECSAI, CODEWRITE, QUANTUM, LEDGER  
FROM: SDC & COMMS Program (Gary Spear / "Sam")  
DATE: October 12, 2025  
SUBJECT: Adaptive Laser Communications for Space Networks – Final Report (Rev A)  
ACTION REQUESTED: Quality-First Gate Review (Compliance + ICD Completeness + Risk Assessment)

### **Executive Summary**

This document provides the final NASA-formatted version of the Adaptive Laser Communications for Space Networks report prepared under the SDC & COMMS program. It outlines the research, development, and implementation roadmap for achieving adaptive 100 Gbps laser communication between LEO and GEO spacecraft.

### **Reviewer Signatures**

Role	Name	Signature	Date
SYS-SAFE			
ICS-SEC			
RELIAB			

HFX			
STRUCT			
ARCHITECT (Project Director)			

## Revision History

Revision	Date	Author	Description of Change	Approved By
Rev A	2025-10-12	Gary Spear / "Sam"	Initial release, NASA-formatted version prepared	ARCHITECT