



# **JFSCC**

## ***Laser Clearinghouse Overview for Laser Owners***



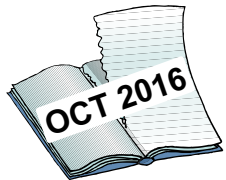
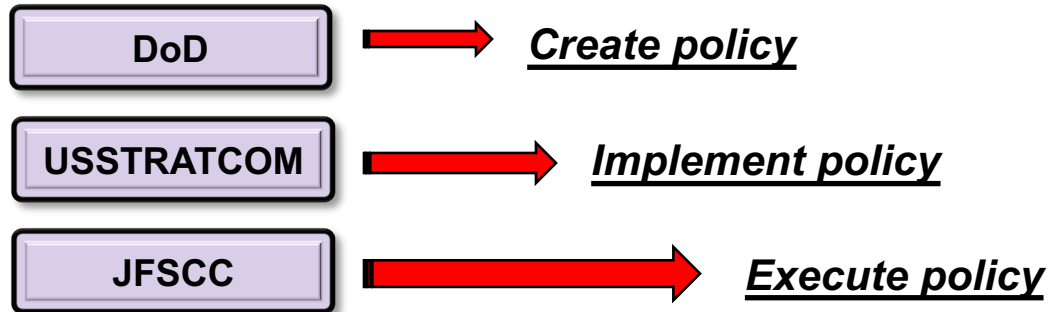


# Background

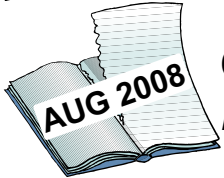
- Experience with numerous laser programs
  - Starfire Optical Range
  - Navy Laser Weapon System (LaWS)
  - Air Force Airborne Laser (ABL)
  - GEMINI North/South
  - Keck Observatory
- As well as variety of laser projects
  - Weapons, range-finders and designators
  - Satellite tracking and astronomy
  - Atmospheric research
  - Laser Communications



# Satellite Safety Policy



**DoD Instruction 3100.11**, “*Management of Laser Illumination of Objects in Space*”  
Note: incremental implementation of revised DoDI in work.



**CJCS Instruction 3225.01**, “*Illumination of Objects in Space by Lasers*”  
Note: to be updated based on new DoDI.



**USSTRATCOM Strategic Instruction 534-12**, “*Laser Deconfliction Process*”  
Note: to be updated based on new DoDI.

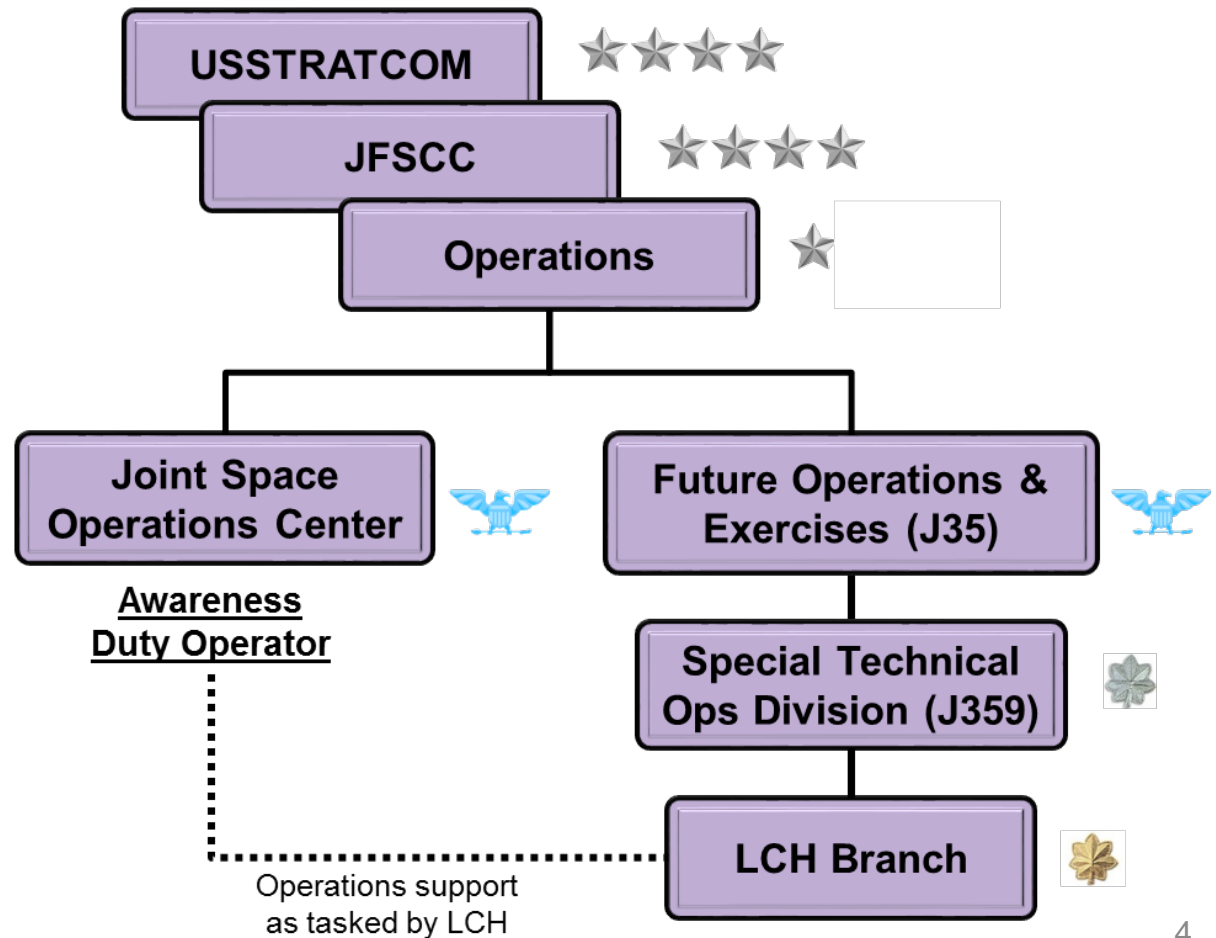
## Laser Clearinghouse Mission:

Ensure that DoD laser activities are conducted in a *safe and responsible* manner that protects space systems, their mission effectiveness, and humans in space, consistent with national security requirements



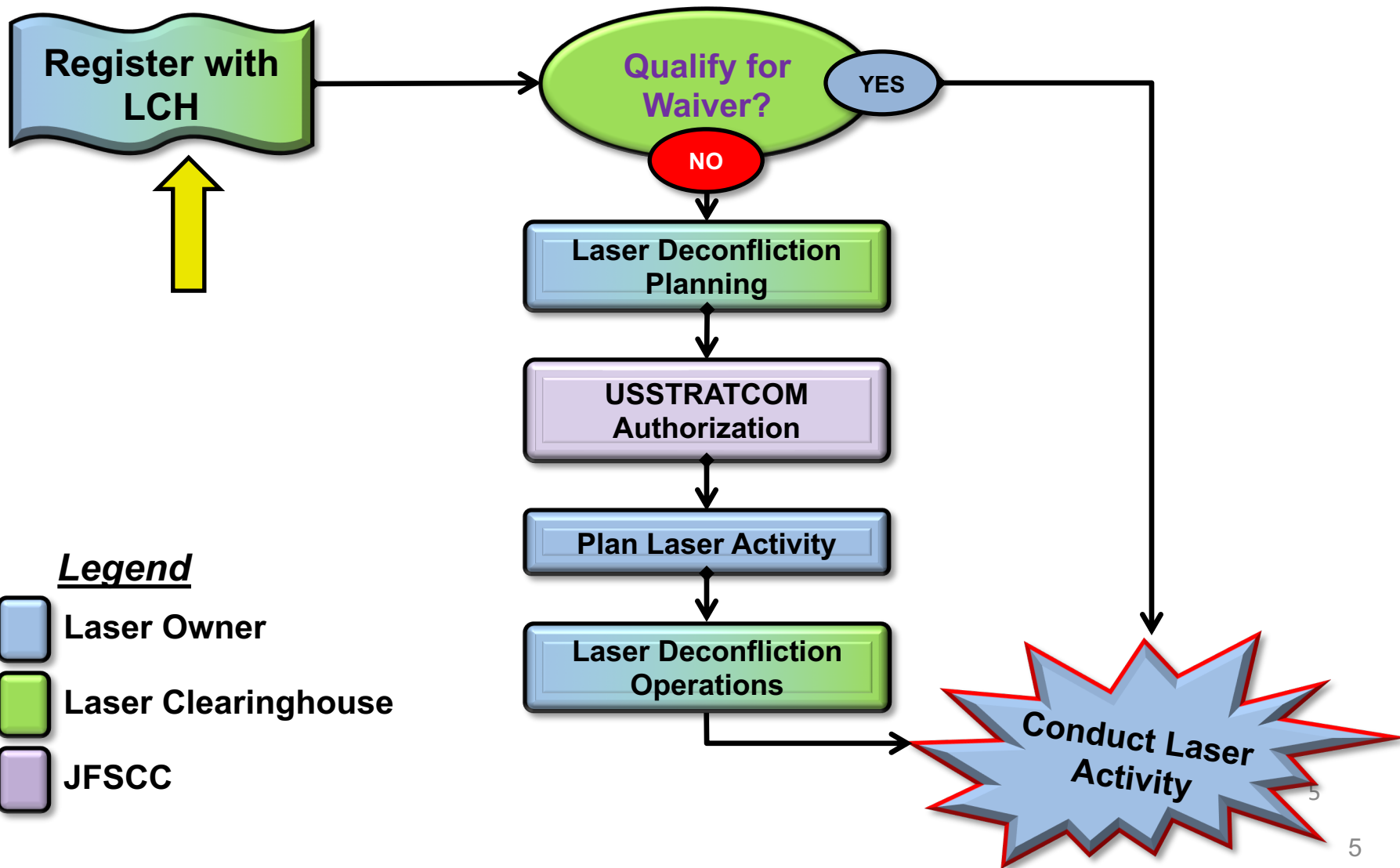
# Laser Clearinghouse

- Located at Vandenberg Air Force Base
- Organization



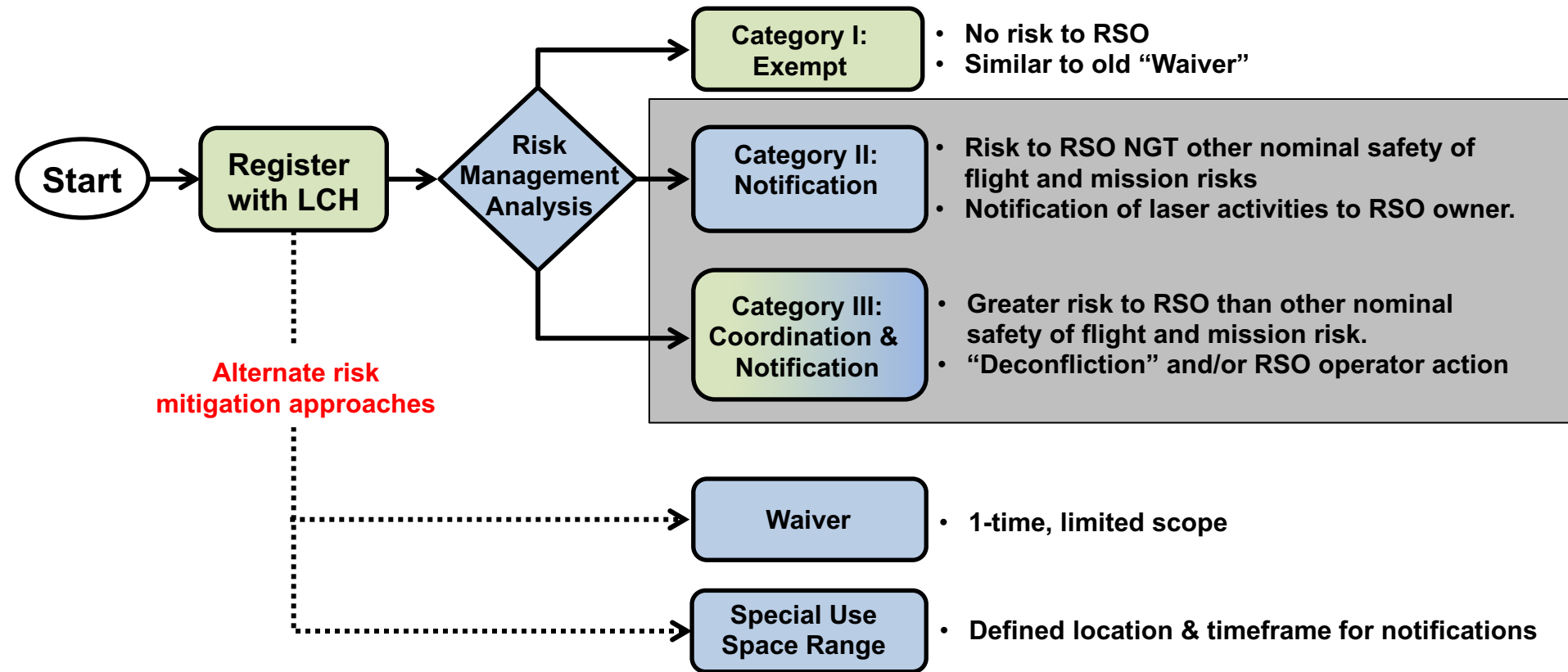


# DoDI 3100.11 Current Process





# DoDI 3100.11 Future Process



Other USSTRATCOM responsibilities:

- (1) Lasing Approval List
- (2) Deliberate illumination test schedule
- (3) Lasing Outside Auth. Parameters
- (4) Arms Control Treaty non-compliance
- (5) Database of lasers, satellite susceptibility & known incidents

**Key:** Comparable to old processes   
 New in Revised DoDI



# Deconfliction Planning



**The entire process can take 4+ months depending on laser and scenario complexity**



# Plan Development

- Process, templates and instructions available
  - Need to be registered with Space-Track.org
- *Standard Centralized Deconfliction and Capability Validation Plan*
  - Generic plan
- Tailored Appendix for laser program
  - Template to be provided by LCH.
  - Describes program specific deconfliction approach
  - Signed by program manager and LCH Branch Chief





# Deconfliction Analysis

- Keep-Out Cone analysis
  - Analysis of factors affecting uncertainties in laser pointing (includes failure modes)
  - Used as “buffer” in computing open firing windows
  - Template to be provided by LCH.
- Deconfliction System/Software Test Report
  - If automated approach, validation of capabilities
  - Template to be provided



# Deconfliction Procedures

- Certification memo - procedures & training
- Certification memo - DoDI 3100.11 compliance
  - Templates of each to be provided
- Site visit by LCH for end-to-end demonstration
  - Last step in the process (“graduation exercise”)
- *LCH Reports Handbook*
  - To be provided
  - Defines various related phone calls and reports
- *Space Deconfliction System* (LCH software)  
*Interface Control Document*
  - Defines PRM and PAM formats (Deconfliction request and approval messages)



# Way Ahead

- Next steps:
  - Submit laser parameters in Laser Registration form
  - Draft *Program-Specific Appendix to Standard Deconfliction Plan*



# Questions

*The Laser Clearinghouse mission is to provide the mission capabilities for supporting safe and responsible laser activities consistent with the needs of national defense*

– US STRATEGIC COMMAND INSTRUCTION 534-12

## LASER CLEARINGHOUSE

JFSCC/J359

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