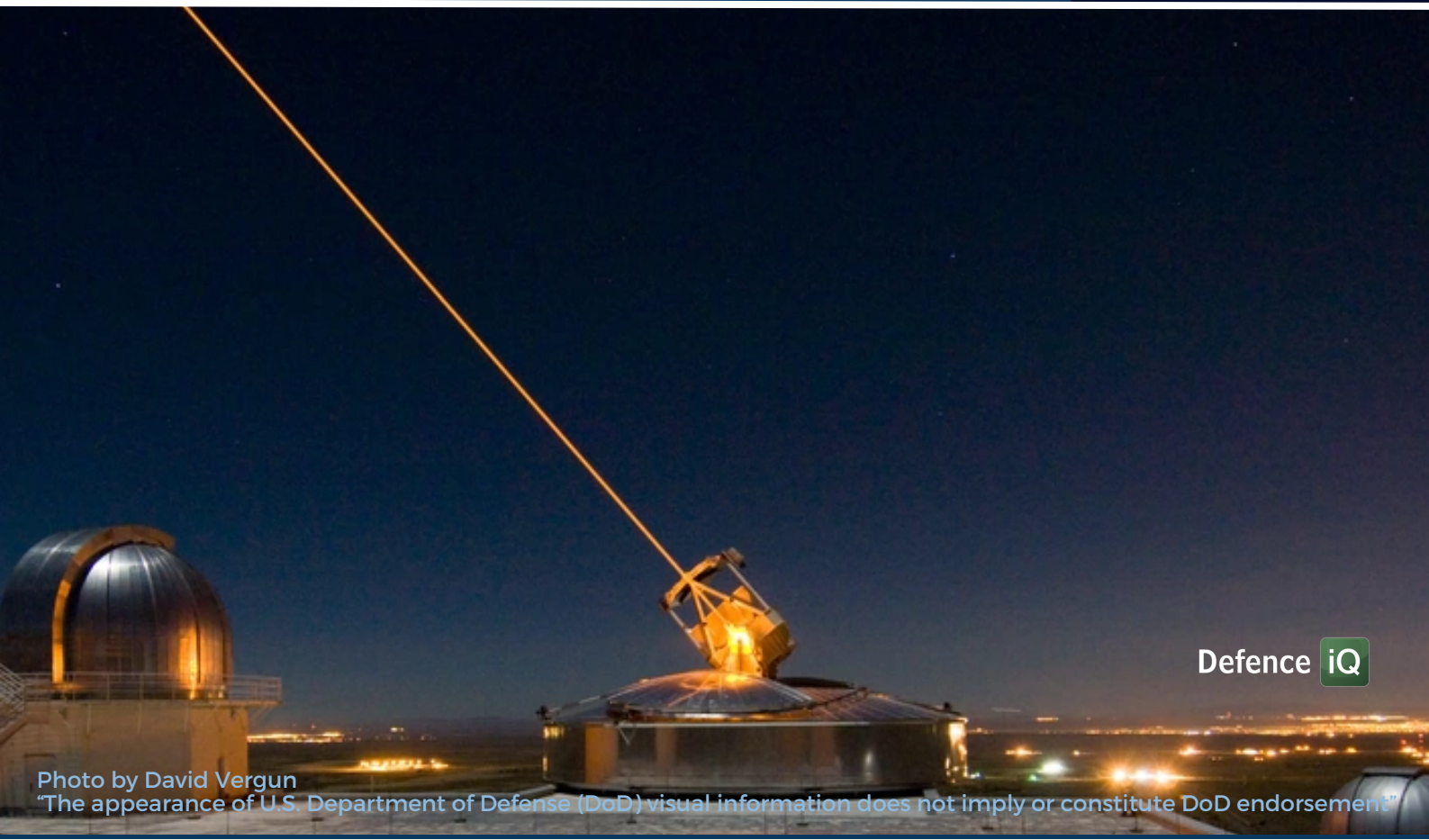


# DIRECTED ENERGY SYSTEMS

## DIRECTED ENERGY SYSTEMS

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PAST, PRESENT, AND FUTURE



Defence **iQ**

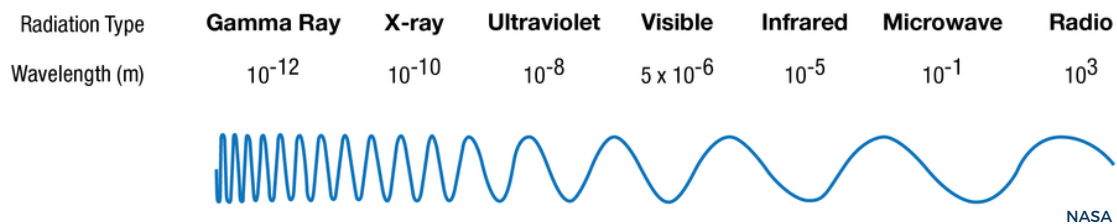
Photo by David Vergun

"The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement."

# BACKGROUND

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DES are increasingly prevalent in the modern military landscape. The global market for DES is expected to grow by 21.5% CAGR by 2028, with further growth anticipated as DES become more deeply integrated in modern militaries. As versatile, cost-effective, and operationally capable platforms, DES are likely to increasingly complement and replace existing systems for a wide range of military applications.



Many countries are currently developing DES, and several have already fielded prototypes and even operational units for active duty. These include the United States, the United Kingdom, France, Israel, and Germany. Applications vary from missile defence to active threat targeting - as technology evolves and becomes more sophisticated, DES are likely to emerge as key systems in modern battlespaces.

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# TIMELINE



USAF

1973

USAF successfully shoots down a test UAV with a laser <sup>1</sup>

Strategic Defence Initiative considers DES for national missile defence <sup>2</sup>

1984



Wikimedia Commons



USAF

1996

USAF initiates development of Airborne Laser program <sup>3</sup>

Microwave-based Active Denial System is fielded for crowd and riot control <sup>4</sup>

2010



US Army





2014

US Navy adopts AN/SEQ-3 Laser Weapon System for active duty <sup>5</sup>

Rheinmetall unveils High Intensity Laser air defence system at DSEI London <sup>6</sup>

2015



2016

US Navy "fully committed" to developing and fielding advanced DES systems <sup>7</sup>

"Dragonfire" laser system unveiled at DSEI London <sup>8</sup>

2017



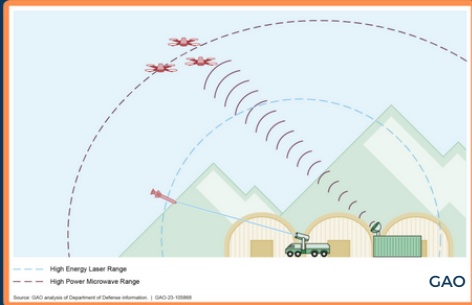


2018

US Navy expands AN/SEQ-3 LWS order for up to \$942.8M<sup>9</sup>

USAF test successfully shoots down missiles using DES<sup>10</sup>

2019



2020

DOD spending on DES tops \$1B annually<sup>11</sup>

Global DES market estimated at \$8.54B in value<sup>12</sup>

2021





2022

Army fields Stryker-mounted DES system for active duty <sup>13</sup>

USAF and Army awards \$900M contract to develop DES C-UAV systems <sup>14</sup>

2023



2024

France projects to deploy laser C-UAS systems to protest 2024 Paris Olympics <sup>15</sup>

Israel plans to deploy "Iron Beam" DES as part of Iron Dome air defense network <sup>16</sup>

2025



# DIRECTED ENERGY SYSTEMS

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THE LEADING INTERNATIONAL FORUM  
FOR THE DES COMMUNITY



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Director Develop  
**Royal Navy**



**Mr. Rich White**  
Program Manager for  
Analysis and Assessment,  
Innovation S&T Directorate  
**Missile Defense Agency**



**Mr. Corry Cox**  
Director, Research and  
Technology  
**US Army SMDC Tech Center**



**Mr. Adam M. Aberle**  
Director for Directed Energy  
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**Mr. Keith Rigby CEng FIET**  
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**Dr. Jeffrey Boulware**  
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**Major Jonathan Greenblatt**  
Head of Airborne HPL  
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**Dr. Ben Allison**  
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