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Small debris removal by laser illumination and complementary technologie

Fact Sheet

Project Information

CLEANSPACE

Grant agreement ID: 263044

[Project website](#) 

Project closed

Start date
1 June 2011

End date
31 May 2014



Funded under
Specific Programme "Cooperation": Space

Total cost
€ 2 882 883,80

EU contribution
€ 1 976 440,00

Coordinated by
COMPAGNIE INDUSTRIELLE
DES LASERS CILAS SA
 France

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Objective

This proposal aims to answer the FP7 Security research call SPA-2010-2.3.02 and the need to protect space assets from orbit collision. The number of debris in Low Earth Orbit is exponentially increasing with, in the short term, potential inter debris collisions. For medium size debris (between 1 cm and several dozens of cm) no effective and affordable protecting solution is available. This project also intends to protect the environment from chain reaction of debris production.

Overall CLEANSPACE objective is to define a global architecture (including surveillance, identification and tracking) for an innovative ground-based laser solution which can remove hazardous medium debris around selected space assets. This approach is divided into three steps:

- ❑ To propose an efficient and affordable global system architecture by taking up survey, tracking, identification and debris treatment by laser system fully in complement with Space Situational Awareness (SSA) ESA programme,
- ❑ To tackle safety regulation aspects, political implications and future collaborations,
- ❑ To develop affordable technological bricks and to establish roadmap for the development and the future implantation of a fully functional laser protection system.

The study approach is built to be fully complementary to SSA programme.

This study is fully part of FP7, SPACE Theme because it will allow Europe to be a key actor for laser debris removal system able to discuss the subject with the USA and Russia and able to guide future ESA work and regulations.

The main driver of the project will be to reduce the cost of such a system focusing on the Laser technology brick which is the key to propose an affordable system.

Scalable laser architecture, ceramic laser active material, laser coherent coupling, alternative narrowband pump sources and laser matter interaction will be the technology fingers of the CLEAN-SPACE innovations.

Fields of science (EuroSciVoc)

[natural sciences](#) > [physical sciences](#) > [optics](#) > [laser physics](#)



Programme(s)

[FP7-SPACE - Specific Programme "Cooperation": Space](#)

Topic(s)

[SPA.2010.2.3-2 - Security of space assets from on-orbit collisions](#)

Call for proposal

FP7-SPACE-2010-1

[See other projects for this call](#)

Funding Scheme

[CP - Collaborative project \(generic\)](#)

Coordinator



COMPAGNIE INDUSTRIELLE DES LASERS CILAS SA

EU contribution

€ 545 600,00

Total cost

No data

Address

AVENUE BUFFON ZI LA SOURCE 8

45100 ORLEANS

 **France** 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (8)



DEUTSCHES ZENTRUM FUR LUFT - UND RAUMFAHRT EV

Germany

EU contribution

€ 648 459,00

Address

LINDER HOHE
51147 Koln

Region

Nordrhein-Westfalen > Köln > Köln, Kreisfreie Stadt

Activity type

Research Organisations

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



AIRBUS DEFENCE AND SPACE SAS

France

EU contribution

€ 162 950,00

Address

31 RUE DES COSMONAUTES ZI DU PALAYS
31402 Toulouse Cedex

Region

Ile-de-France > Ile-de-France > Yvelines

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)

Total cost

No data



UNIVERSITAT ROVIRA I VIRGILI

 Spain

EU contribution

€ 87 615,00

Address

CARRER DE ESCORXADOR
43003 Tarragona 

Region

Este > Catalunya > Tarragona

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Total cost

No data



UNIVERSITE LYON 1 CLAUDE BERNARD

 France

EU contribution

€ 99 792,00

Address

BOULEVARD DU 11 NOVEMBRE 1918 NUM43
69622 Villeurbanne Cedex 

Region

Auvergne-Rhône-Alpes > Rhône-Alpes > Rhône

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



INSTYTUT NISKICH TEMPERATUR I BADAN STRUKTURALNYCH IM. WŁODZIMIERZA TRZEBIATOWSKIEGO POLSKIEJ AKADEMII NAUK

 Poland

EU contribution

€ 102 025,00

Address

UL OKOLNA 2

50-422 Wrocław 

Region

Makroregion południowo-zachodni > Dolnośląskie > Miasto Wrocław

Activity type

Research Organisations

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



UNIwersytet im. Adama Mickiewicza w Poznaniu

 Poland

EU contribution

€ 104 400,00

Address

ULICA HENRYKA WIENIAWSKIEGO 1

61 712 Poznań 

Region

Makroregion północno-zachodni > Wielkopolskie > Miasto Poznań

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



ASTRI POLSKA SPOLKA Z OGRANICZONA ODPOWIEDZIALNOSCIA

 Poland

EU contribution

€ 84 974,00

Address

ULICA BARTYCKA 18A

00716 Warszawa 

Region

Makroregion województwo mazowieckie > Warszawski stołeczny > Miasto Warszawa

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



UNIVERSITE DE LIMOGES

 France

EU contribution

€ 140 625,00

Address

François Mitterrand 33

87032 Limoges 

Region

Nouvelle-Aquitaine > Limousin > Haute-Vienne

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

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Permalink: <https://cordis.europa.eu/project/id/263044>

European Union, 2025

