

DarkSide Current						DS Layout-Work Breakdown Structure						18-May-19 12:18																							
Activity ID	Activity Name	DS_Funding Source	DS_Institution	Original Duration	Start	Finish	Global Labor Cost [USD]	Global Non Labor Cost [USD]	Global Total Cost [USD]	2017				2018				2019				2020				2021				2022				2023	
										Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2			
DarkSide DarkSide Current																																			
DarkSide.1 DarkSide-20k																																			
DarkSide.1.01 Photo Electronics																																			
DarkSide.1.01.01 SIPM																																			
DS-1111000	SIPM- TSVs	NSF-Mid-scale	UMass	180	01-Jul-19*	27-Dec-19	\$0.00	\$580,000.00	\$580,000.00																										
DS-1111001	SIPM-R&D	INFN-CSN2	LNGS	851	01-Jan-17*	01-May-19	\$0.00	\$121,000.00	\$121,000.00																										
DS-1111002	SIPM - Preproduction	INFN-CIPE-1	INFN-BO	153	01-May-19*	30-Sep-19	\$0.00	\$540,100.00	\$540,100.00																										
DS-1111003	SIPM - Production	INFN-PON	INFN-BO	458	01-Oct-19	31-Dec-20	\$0.00	\$6,246,900.00	\$6,246,900.00																										
DS-1111004	SIPM-Technician	INFN-MP	INFN-BO	1096	01-Jul-19*	30-Jun-22	\$468,600.00	\$0.00	\$468,600.00																										
DS-1111005	SIPM- Packaging technician	STFC	INFN-BO	912	01-Jan-20*	30-Jun-22	\$1,950,000.00	\$0.00	\$1,950,000.00																										
DS-1111006	SIPM - Scientists	AstroCeNT	INFN-BO	1461	01-May-19*	30-Apr-23	\$2,887,500.00	\$0.00	\$2,887,500.00																										
DarkSide.1.01.02 Tile and Substrates																																			
DS-1112000	Tile and s ubstrates - R&D	NSF-Mid-scale	Princeton	184	01-Jul-19*	31-Dec-19	\$0.00	\$263,500.00	\$263,500.00																										
DS-1112001	Tile and s ubstrates - Labor	NSF-Mid-scale	Princeton	1096	01-Oct-19*	30-Sep-22	\$508,000.00	\$0.00	\$508,000.00																										
DS-1112002_1	Tile and s ubstrates - Preproduction	INFN-CIPE-1	LNGS	92	01-May-19	31-Jul-19	\$0.00	\$35,200.00	\$35,200.00																										
DS-1112003	Tile and s ubstrates - PCB and components	INFN-CIPE-1	LNGS	550	01-Jul-19*	31-Dec-20	\$0.00	\$661,100.00	\$661,100.00																										
DS-1112004	Tile and s ubstrates - Technicians	INFN-MP	LNGS	1096	01-Jul-19*	30-Jun-22	\$140,800.00	\$0.00	\$140,800.00																										
DarkSide.1.01.03 Front-end electronics																																			
DarkSide.1.01.03.01 FEB prototyping																																			
DS-1113100	FEB prototyping	INFN-CSN2	LNGS	546	01-Jan-17*	30-Jun-18	\$0.00	\$82,500.00	\$82,500.00																										
DarkSide.1.01.03.02 FEB preproduction																																			
DS-1113200	FEB preproduction	INFN-CIPE-1	LNGS	122	01-Apr-19*	31-Jul-19	\$0.00	\$36,300.00	\$36,300.00																										
DarkSide.1.01.03.03 FEB production																																			
DS-1113300	FEB production - TPC	INFN-CIPE-1	LNGS	488	01-Sep-19*	31-Dec-20	\$0.00	\$534,600.00	\$534,600.00																										
DS-1113301	FEB production - consumables	INFN-CSN2	LNGS	488	01-Sep-19*	31-Dec-20	\$0.00	\$27,500.00	\$27,500.00																										
DS-1113302	FEB production - Veto	INFN-CIPE-2	LNGS	90	01-Jan-21	31-Mar-21	\$0.00	\$344,300.00	\$344,300.00																										
DarkSide.1.01.03.04 Steering Module																																			
DS-1113411	Printed circuit boards - prototyping	DOE	BNL	395	01-Jun-18*	30-Jun-19	\$0.00	\$2,000.00	\$2,000.00																										
DS-1113412	Run prototyping	DOE	BNL	395	01-Jun-18*	30-Jun-19	\$0.00	\$2,000.00	\$2,000.00																										
DS-1113413	Argon for cryogenics test - prototyping	DOE	BNL	395	01-Jun-18*	30-Jun-19	\$0.00	\$2,000.00	\$2,000.00																										
DS-1113421	Printed circuit boards - preproduction	DOE	BNL	184	01-Jul-19*	31-Dec-19	\$0.00	\$2,000.00	\$2,000.00																										
DS-1113422	Run - preproduction	DOE	BNL	184	01-Jul-19*	31-Dec-19	\$0.00	\$4,000.00	\$4,000.00																										
DS-1113423	Argon for cryogenics test - preproduction	DOE	BNL	184	01-Jul-19*	31-Dec-19	\$0.00	\$1,000.00	\$1,000.00																										
DS-1113431	PCB Material - Production	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$0.00	\$8,000.00	\$8,000.00																										
DS-1113432	Printed circuit boards - Production	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$0.00	\$9,000.00	\$9,000.00																										
DS-1113433	Run - Production	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$0.00	\$170,000.00	\$170,000.00																										
DS-1113434	Material burden	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$0.00	\$15,000.00	\$15,000.00																										
DS-1113435	Steering module production labor	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$134,000.00	\$0.00	\$134,000.00																										
DS-1113435_1	Steering module production Engineer	DOE	BNL	365	01-Jan-20*	30-Dec-20	\$500,000.00	\$0.00	\$500,000.00																										
DarkSide.1.01.04 Detector module integration																																			
DS-111400	Detector module integration	INFN-CSN2	INFN-PI	1642	01-Jan-17*	30-Jun-21	\$0.00	\$397,100.00	\$397,100.00																										
DarkSide.1.01.05 Motherboard characterization																																			
DS-111500	Motherboard characterization (LN2 tests)	INFN-CSN2	INFN-NA	945	01-Jun-19*	31-Dec-21	\$0.00	\$1,040,600.00	\$1,040,600.00																										
DarkSide.1.01.07 Optolink																																			
DS-111700	Optolink - Prototyping and preproduction	INFN-CSN2	LNGS	730	01-Jan-18*	31-Dec-19	\$0.00	\$300,300.00	\$300,300.00																										
DS-111800	Optolink - TPC, Veto fibers + Optical driver PCB	INFN-CIPE-1	LNGS	853	01-Sep-19*	31-Dec-21	\$0.00	\$3,348,400.00	\$3,348,400.00																										
DS-111900	Optolink - Receivers and Driver components	INFN-CIPE-2	LNGS	488	01-Sep-19*	31-Dec-20	\$0.00	\$1,955,800.00	\$1,955,800.00																										
DarkSide.1.01.08 Cabling																																			
DS-111901	Cabling	INFN-CSN2	INFN-MI	1461	01-Jan-17	31-Dec-20	\$0.00	\$249,700.00	\$249,700.00																										
DarkSide.1.01.09 Motherboard																																			
DS-112000	Motherboard Production	INFN-CSN2	INFN-BO	1461	01-Jan-17*	31-Dec-20	\$0.00	\$193,600.00	\$193,600.00																										
DS-112100	Motherboard-cleaning	INFN-CIPE-2	LNL	641	01-Apr-19*	31-Dec-20	\$0.00	\$275,000.00	\$275,000.00																										
DarkSide.1.01.10 SIPM power supplies																																			
DS-112110	SIPM power supplies - TPC and VETO	INFN-CIPE-2	INFN-BO	884	01-Sep-19	31-Jan-22	\$0.00	\$1,061,500.00	\$1,061,500.00																										
DarkSide.1.01.11 Integrated electronics																																			
DS-112112	Integrated electronics	INFN-CSN2	INFN-TO	1492	01-Jan-17	31-Jan-21	\$0.00	\$344,300.00	\$344,300.00																										
DarkSide.1.01.12 NOA																																			
DS-501000	Clean Room	INFN-PON	LNGS	1005	01-Apr-20*	31-Dec-22	\$4,470,400.00	\$9,368,700.00	\$13,839,100.00																										
DS-502000	Packaging facility, housing, refurbishing, gas and electricity	INFN-CIPE-1	LNGS	1096	01-Oct-19*	30-Sep-22	\$0.00	\$2,665,300.00	\$2,665,300.00																										
DS-503000	Silicon packaging equipments Part1	INFN-CIPE-1	INFN-BO	1096	01-Oct-19*	30-Sep-22	\$0.00	\$3,795,000.00	\$3,795,000.00																										
DS-503001	Silicon packaging equipments Part2	INFN-CIPE-2	INFN-BO	1096	01-Oct-19*	30-Sep-22	\$0.00	\$220,000.00	\$220,000.00																										
DS-504000	LA-ICPMS	INFN-MP	LNGS	182	01-Jan-20*	30-Jun-20	\$157,300.00	\$0.00	\$157,300.00																										
DS-505000	Mechanical-3D Equipment	INFN-CIPE-1	LNGS	185	30-Jun-18*	31-Dec-18	\$0.00	\$268,400.00	\$268,400.00																										
DS-505001	Mechanical-3D Labor	INFN-MP	LNGS	1646	30-Jun-18*	31-Dec-22	\$157,300.00	\$0.00	\$157,300.00																										
DS-506000	NOA Infrastructures	INFN-CIPE-1	LNGS	365	01-Jan-19*	31-Dec-19	\$0.00	\$220,000.00	\$220,000.00																										
DS-507000	Website & Outreach	INFN-CIPE-1	LNGS	1461	01-Jan-19*	31-Dec-22	\$0.00	\$44,000.00	\$44,000.00																										
DS-508000	Trav els	INFN-CIPE-1	LNGS	1646	30-Jun-18*	31-Dec-22	\$0.00	\$66,000.00	\$66,000.00																										
DS-509000	Administrative personnel	INFN-MP	LNGS	1097	01-Jul-19*	01-Jul-22	\$140,800.00	\$0.00	\$140,800.00																										
DS-510000	Faculty personnel (PS)	INFN-MP	LNGS	1463	30-Jun-18*	01-Jul-22	\$396,000.00	\$0.00	\$396,000.00																										
DS-511000	Faculty personnel, engineers, technicians	INFN-MP	LNGS	1188	01-Oct-19*	31-Dec-22	\$3,619,000.00	\$0.00	\$3,619,000.00																										
DarkSide.1.02 DarkSide-20k Inner Detector and Cryogenics																																			

Remaining Level of Effort

Actual Work

Critical Remaining Work

Actual Level of Effort

Remaining Work

◆

◆ Milestone

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TASK filter: (Untitled Filter).

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DarkSide Current										DS Layout-Work Breakdown Structure										18-May-19 12:18															
Activity ID	Activity Name	DS_Funding Source	DS_Institution	Original Duration	Start	Finish	Global Labor Cost [USD]	Global Non Labor Cost [USD]	Global Total Cost [USD]	2017				2018				2019				2020				2021				2022				2023	
										Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2			
DarkSide.1.02.01	Proto-Proto TPC				244	01-Mar-19	30-Oct-19	\$0.00	\$43,000.00	\$43,000.00																									
	DS-120640	Field Cage	NSF	UC Davis	153	01-Mar-19*	31-Jul-19	\$0.00	\$10,000.00	\$10,000.00																									
	DS-120660	Reflector Cage	NSF	UC Davis	153	01-Mar-19*	31-Jul-19	\$0.00	\$5,000.00	\$5,000.00																									
	DS-120680	HV System	NSF	UC Davis	153	01-Mar-19*	31-Jul-19	\$0.00	\$5,000.00	\$5,000.00																									
	DS-120700	Extraction Grid (Wire and Frame)	NSF	Houston	153	01-Mar-19*	31-Jul-19	\$0.00	\$10,000.00	\$10,000.00																									
	DS-120720	TPC integration at CERN	NSF	UCLA	152	01-Jun-19*	30-Oct-19	\$0.00	\$13,000.00	\$13,000.00																									
	DarkSide.1.02.02 Prototype TPC				183	01-Jul-19	30-Dec-19	\$0.00	\$1,274,700.00	\$1,274,700.00																									
	DS-121320	Prototype TPC Components	INFN-PON	INFN-Roma1	183	01-Jul-19*	30-Dec-19	\$0.00	\$165,000.00	\$165,000.00																									
	DS-121320_1	TPC vessel test facility	INFN-PON	INFN-Roma1	183	01-Jul-19*	30-Dec-19	\$0.00	\$634,700.00	\$634,700.00																									
	DS-121980	TPC Acrylic Vessel	CFI-DarkSide	Alberta	183	01-Jul-19*	30-Dec-19	\$0.00	\$140,000.00	\$140,000.00																									
DS-122640	Field Cage	NSF	UC Davis	183	01-Jul-19*	30-Dec-19	\$0.00	\$32,000.00	\$32,000.00																										
DS-123300	Reflector Cage	NSF	UC Davis	183	01-Jul-19*	30-Dec-19	\$0.00	\$32,000.00	\$32,000.00																										
DS-123960	HV System	NSF	UC Davis	183	01-Jul-19*	30-Dec-19	\$0.00	\$53,000.00	\$53,000.00																										
DS-123960_1	HV System (Power supplies)	NSF	UC Davis	183	01-Jul-19*	30-Dec-19	\$0.00	\$60,000.00	\$60,000.00																										
DS-1246201	Extraction Grid (Wire and Frame)	NSF	Houston	183	01-Jul-19*	30-Dec-19	\$0.00	\$158,000.00	\$158,000.00																										
DarkSide.1.02.03 DarkSide-20k TPC				1210	01-Jul-19	22-Oct-22	\$1,167,970.00	\$3,694,097.00	\$4,862,067.00																										
A1110	TPC Materials Assays	NSF-Mid-scale	Princeton	1110	01-Jul-19*	14-Jul-22	\$0.00	\$120,000.00	\$120,000.00																										
A1120	Proposal IDC	NSF-Mid-scale	Princeton	1096	01-Oct-19*	30-Sep-22	\$0.00	\$521,877.00	\$521,877.00																										
DS-122600	Acrylic Bonding	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$140,000.00	\$140,000.00																										
DS-122620	Acrylic bonding structure	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$210,000.00	\$210,000.00																										
DS-1226401	Q/A Slow Control Bonding Test	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$105,000.00	\$105,000.00																										
DS-122660	Annealing and control	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$70,000.00	\$70,000.00																										
DS-122680	Vessel Engineering	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$350,000.00	\$0.00	\$350,000.00																										
DS-122700	Vessel Engineer Travel	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$70,000.00	\$70,000.00																										
DS-122720	Contract to RPT/X	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$1,400,000.00	\$1,400,000.00																										
DS-122740	TPC Vessel Support	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$105,000.00	\$105,000.00																										
DS-122760	Technician Support	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$280,000.00	\$0.00	\$280,000.00																										
DS-122780	Technician travel	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$70,000.00	\$70,000.00																										
DS-122800	Physician Travel	CFI-DarkSide	Alberta	1110	01-Jul-19*	14-Jul-22	\$0.00	\$70,000.00	\$70,000.00																										

DarkSide Current

Activity ID

Activity Name

DS_Funding Source

DS_Institution

Original Duration

Start

Finish

Global Labor Cost [USD]

Global Non Labor Cost [USD]

Global Total Cost [USD]

DarkSide.1.02.07 DarkSide-Prototype Cryogenics System

DS-127200

DarkSide-Prototype Cryogenics System

NSF

UCLA

671

01-Mar-19

30-Dec-20

\$0.00

\$50,000.00

\$50,000.00

DarkSide.1.02.08 UAr Storage and Recovery System

DS-127780

Project Engineer

NSF-Mid-scale

Princeton

1096

01-Oct-19*

30-Sep-22

\$552,000.00

\$0.00

\$552,000.00

DS-127800

Condenser

NSF-Mid-scale

Princeton

1096

01-Oct-19*

30-Sep-22

\$0.00

\$127,000.00

\$127,000.00

DS-127820

Gas Panel

NSF-Mid-scale

Princeton

1096

01-Oct-19*

30-Sep-22

\$0.00

\$267,000.00

\$267,000.00

DS-127840

Compressor

NSF-Mid-scale

Princeton

1096

01-Oct-19*

30-Sep-22

\$0.00

\$67,000.00

\$67,000.00

DarkSide.1.03 Materials

DS-130100

Background Budget - Assay oversight

Spain

CIEMAT

1736

01-Apr-17*

31-Dec-21

\$95,975.00

\$0.00

\$95,975.00

DS-130400

Cosmogenic & Intrinsic Activity

Spain

Zaragoza Un

1280

01-Jul-18*

31-Dec-21

\$52,800.00

\$0.00

\$52,800.00

DarkSide.1.03.01 Materials Radiopurity Assay

DS-130502

Materials Radiopurity Assay - Temple assays

NSF

Temple

1461

01-Jan-18*

31-Dec-21

\$0.00

\$60,000.00

\$60,000.00

DS-130503

Materials Radiopurity Assay - LSC assays

Spain-in-Kind

CIEMAT

1736

01-Apr-17*

31-Dec-21

\$0.00

\$275,000.00

\$275,000.00

DS-130504

Materials Radiopurity Assay - Radioch. And Mass. Spec. - CIEI

Spain-in-Kind

CIEMAT

1736

01-Apr-17*

31-Dec-21

\$0.00

\$176,000.00

\$176,000.00

DS-130505

Materials Radiopurity Assay - Radioch. And Mass. Spec. - LSC

Spain-in-Kind

Zaragoza Un

1736

01-Apr-17*

31-Dec-21

\$0.00

\$176,000.00

\$176,000.00

DS-130506

Materials Radiopurity Assay - Large surf. Assay - LSC assays

Spain-in-Kind

Zaragoza Un

1736

01-Apr-17*

31-Dec-21

\$0.00

\$56,100.00

\$56,100.00

DS-130507

Materials Radiopurity Assay - Large surf. Assay - Krakow assays

Poland-in-Kind

Krakow

1736

01-Apr-17*

31-Dec-21

\$0.00

\$16,500.00

\$16,500.00

DS-130508

Materials Radiopurity Assay - Pb/Po - Krakow assays

Poland-in-Kind

Krakow

1736

01-Apr-17*

31-Dec-21

\$0.00

\$11,000.00

\$11,000.00

DS-130509

Materials Radiopurity Assay - LNGS assays

INFN-in-Kind

LNGS

1736

01-Apr-17*

31-Dec-21

\$0.00

\$143,000.00

\$143,000.00

DarkSide.1.04 Calibrations

DS-141001

Sources - Gas sources

NSF-Mid-scale

Hawaii

1004

01-Jul-19*

30-Mar-22

\$0.00

\$15,000.00

\$15,000.00

DS-141002

Sources - Gas sources

Poland

Krakow

1004

01-Jul-19*

30-Mar-22

\$5,500.00

\$5,500.00

\$11,000.00

DS-141003

Sources - Gamma-ray

NSF-Mid-scale

Hawaii

1004

01-Jul-19*

30-Mar-22

\$0.00

\$30,000.00

\$30,000.00

DS-141004

Sources - AmC, AmBe, AmLi

NSF-Mid-scale

Hawaii

1004

01-Jul-19*

30-Mar-22

\$4,000.00

\$36,000.00

\$40,000.00

DS-141005

Sources - 252Cf

Russia

BNRU / MSU

1004

01-Jul-19*

30-Mar-22

\$11,000.00

\$22,000.00

\$33,000.00

DS-141006

Sources - UV led for VETO calibration

Russia

BNRU / MSU

1004

01-Jul-19*

30-Mar-22

\$0.00

\$22,000.00

\$22,000.00

DS-141007

Sources - Pyroelectric neutron generator

Russia

BNRU / MSU

1004

01-Jul-19*

30-Mar-22

\$110,000.00

\$165,000.00

\$275,000.00

DS-142001

TPC guide mechanics Labor

IN2P3

1004

01-Jul-19*

30-Mar-22

\$16,500.00

\$0.00

\$16,500.00

DS-142001_1

TPC guide mechanics Production

NSF-Mid-scale

Hawaii

1004

01-Jul-19*

30-Mar-22

\$0.00

\$80,000.00

\$80,000.00

DS-143000

External deployment system for Photoneutron source Labor

NSF-Mid-scale

Hawaii

914

01-Jul-20*

31-Dec-22

\$258,000.00

\$0.00

\$258,000.00

DS-143000_1

External deployment system for Photoneutron source Production

NSF-Mid-scale

Hawaii

914

01-Jul-20*

31-Dec-22

\$0.00

\$30,000.00

\$30,000.00

DS-143000_2

Photoneutron source

NSF-Mid-scale

Hawaii

914

01-Jul-20*

31-Dec-22

\$0.00

\$107,000.00

\$107,000.00

DS-143000_3

Camera system

NSF-Mid-scale

Hawaii

914

01-Jul-20*

31-Dec-22

\$0.00

\$40,000.00

\$40,000.00

DS-143000_4

Camera Integration

NSF-Mid-scale

Virginia Tech.

251

01-Oct-19*

30-Sep-20

\$54,980.00

\$64,260.00

\$119,240.00

DS-143000_5

Postdoc for Calibration Work

NSF-Mid-scale

Hawaii

1004

01-Jul-19*

30-Mar-22

\$0.00

\$180,000.00

\$180,000.00

DarkSide.1.05 Outer Detector

A1160

Long Term UAr Storage

CFI-Argon

Carleton

366

01-Jan-20*

31-Dec-20

\$0.00

\$980,000.00

\$980,000.00

DS-151000

Development of Gd loaded acrylic

INFN-CSN2

INFN-GE

547

01-Oct-18*

30-Mar-20

\$0.00

\$116,600.00

\$116,600.00

DS-152000

Procurement of the VETO acrylic

IHEP

IHEP

366

30-Mar-20*

30-Mar-21

\$0.00

\$605,000.00

\$605,000.00

DS-153000

Development of VETO Reflectors

Poland

AstroCeNT

275

30-Sep-19*

30-Jun-20

\$0.00

\$11,000.00

\$11,000.00

DS-155000

Development of VETO electronics

INFN-CSN2

INFN-GE

459

30-Sep-19*

31-Dec-20

\$0.00

\$11,000.00

\$11,000.00

DS-155000_1

Optical VETO Calibration

INFN-CSN2

INFN-GE

459

30-Sep-19*

31-Dec-20

\$0.00

\$198,000.00

\$198,000.00

DS-155001

Development of VETO electronics - radiopurity

Spain-in-Kind

CIEMAT

459

30-Sep-19*

31-Dec-20

\$0.00

\$11,000.00

\$11,000.00

DS-156000

VETO Prototype

INFN-CSN2

INFN-GE

356

01-Jan-20*

21-Dec-20

\$0.00

\$11,000.00

\$11,000.00

DS-157000

VETO Mechanics

INFN-CSN2

INFN-GE

366

01-Jan-20*

31-Dec-20

\$0.00

\$352,000.00

\$352,000.00

DS-157000_1

Acrylic Cleaning

INFN-CIPE-2

LNL

90

31-Mar-21

28-Jun-21

\$0.00

\$22,000.00

\$22,000.00

DS-158000

PDM VETO Installation

INFN-CIPE-2

INFN-GE

94

01-Oct-21*

02-Jan-22

\$0.00

\$16,500.00

\$16,500.00

DS-158000_1

VETO installation and commissioning

INFN-CIPE-2

INFN-GE

360

03-Jan-22

28-Dec-22

\$0.00

\$148,500.00

\$148,500.00

DS-158000_2

Integral Detector Stability Monitoring

NSF-Mid-scale

Virginia Tech.

251

01-Oct-19*

30-Sep-20

\$334,087.00

\$76,020.00

\$410,107.00

DarkSide.1.05.01 Procurement of VETO Reflectors

DS-154001

Procurement of VETO Reflectors - 3M foil

CFI-DarkSide

AstroCeNT

366

01-Jul-20

01-Jul-21

\$0.00

\$280,000.00

\$280,000.00

DS-154002

Procurement of VETO Reflectors - 3M foil

INFN-CIPE-2

AstroCeNT

366

01-Jul-20

01-Jul-21

\$0.00

\$89,100.00

\$89,100.00

DS-154003

Procurement of VETO Reflectors - 3M foil

AstroCeNT

AstroCeNT

366

01-Jul-20

01-Jul-21

\$0.00

\$137,500.00

\$137,500.00

DS-154004

Procurement of VETO Reflectors - TPB

INFN-CIPE-2

AstroCeNT

366

01-Jul-20

01-Jul-21

\$0.00

\$82,500.00

\$82,500.00

DS-154005

Procurement of VETO Reflectors - TPB

AstroCeNT

AstroCeNT

366

01-Jul-20*

01-Jul-21

\$0.00

\$137,500.00

\$137,500.00

DS-154005_1

VETO Reflectors Labor

INFN-MP

LNGS

1096

01-Jul-19*

30-Jun-22

\$154,000.00

\$0.00

\$154,000.00

DS-154006

Procurement of VETO Reflectors - Evaporation systems and c

INFN-CIPE-2

LNGS

366

30-Jun-20*

30-Jun-21

\$0.00

\$242,000.00

\$242,000.00

DS-154007

Procurement of VETO Reflectors - Packaging

INFN-CIPE-2

LNGS

366

30-Jun-20*

30-Jun-21

\$0.00

\$11,000.00

\$11,000.00

DarkSide.1.06 ELECTRONICS (DAQ, Trigger and Slow Control)

DarkSide.1.06.01 Readout

DS-161001

Readout boards for Proto

INFN-CSN2

INFN-Roma1

1736

01-Apr-17*

31-Dec-21

\$0.00

\$104,500.00

\$104,500.00

DS-161001_1

Readout boards for TPC Non Labor

INFN-CSN2

INFN-Roma1

1736

01-Apr-17*

31-Dec-21

\$0.00

\$206,800.00

\$206,800.00

DS-161002

Readout boards for TPC Non Labor

CFI-DarkSide

TRIUMF

1736

01-Apr-17*

31-Dec-21

\$0.00

\$1,566,600.00

\$1,566,600.00

DS-161003

Readout boards for TPC Labor

CFI-DarkSide

TRIUMF

1736

01-Apr-17*

31-Dec-21

\$700,000.00

\$0.00

\$700,000.00

DS-161004

Readout boards Labor

INFN-MP

INFN-Roma1

1736

01-Apr-17*

31-Dec-21

\$159,500.00

\$0.00

\$159,500.00

DS-161005

Readout boards for veto

CFI-DarkSide

TRIUMF

1736

01-Apr-17*

31-Dec-21

\$0.00

\$630,000.00

\$630,000.00

DS-161005_1

Readout boards for R&D

INFN-CSN2

INFN-Roma1

1736

01-Apr-17*

31-Dec-21

\$0.00

\$55,000.00

\$55,000.00

DarkSide.1.06.02 Trigger

DS-162001

Trigger - clock distribution

CFI-DarkSide

TRIUMF

1460

01-Apr-17*

30-Mar-21

\$0.00

\$87,500.00

\$87,500.00

DS-162002

Trigger - Event builder + Cluster

INFN-CSN2

INFN-Roma1

1460

01-Apr-17*

30-Mar-21

\$0.00

\$198,000.00

\$198,000.00

DS-162002_1

Cluster for Master Trigger Development

INFN-CSN2

LNGS

1460

01-Apr-17*

30-Mar-21

\$0.00

\$22,000.00

\$22,000.00

Remaining Level of Effort

Actual Work

Critical Remaining Work

Actual Level of Effort

Remaining Work

Milestone

Milestone

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TASK filter: (Untitled Filter).

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DarkSide Current							DS Layout-Work Breakdown Structure										18-May-19 12:18																				
Activity ID		Activity Name		DS_Funding Source	DS_Institution	Original Duration	Start	Finish	Global Labor Cost [USD]	Global Non Labor Cost [USD]	Global Total Cost [USD]	2017				2018				2019				2020				2021				2022				2023	
												Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2							
DarkSide.1.06.03 Slow Control						456	01-Apr-20	30-Jun-21	\$0.00	\$50,000.00	\$50,000.00																										
DS-163000 Slow Control - DAQ				NSF-Mid-scale	Princeton	456	01-Apr-20*	30-Jun-21	\$0.00	\$50,000.00	\$50,000.00																										
DarkSide.1.06.04 Infrastructure and Power supply						640	01-Apr-20	31-Dec-21	\$0.00	\$308,000.00	\$308,000.00																										
DS-164000 Infrastructure and Power supply				CFI-DarkSide	TRIUMF	640	01-Apr-20*	31-Dec-21	\$0.00	\$308,000.00	\$308,000.00																										
DarkSide.1.07 Offline						1765	01-Apr-18	29-Jan-23	\$291,500.00	\$2,403,500.00	\$2,695,000.00																										
DS-172000 Reconstruction software				IN2P3	IN2P3	1582	01-Oct-18*	29-Jan-23	\$187,000.00	\$0.00	\$187,000.00																										
DS-172002 Reconstruction software engineer				INFN-MP	INFN-Roma1	548	01-Oct-18*	31-Mar-20	\$104,500.00	\$0.00	\$104,500.00																										
DS-175000 HW CPU and Storage				INFN-Computi	INFN-Roma1	1644	01-Apr-18*	30-Sep-22	\$0.00	\$2,403,500.00	\$2,403,500.00																										
DarkSide.1.08 Red						1368	01-Jan-17	29-Sep-20	\$0.00	\$938,900.00	\$938,900.00																										
DS-180400 Neutron Beam				INFN-CSN2	LNS	730	01-Jan-17*	31-Dec-18	\$0.00	\$55,000.00	\$55,000.00																										
DS-180400_1 Neutron Beam				INFN-in-Kind	LNS	181	01-Jan-19*	30-Jun-19	\$0.00	\$11,000.00	\$11,000.00																										
DS-180500 nToF Spectrometer				INFN-CSN2	INFN-Roma1	273	01-Jan-17*	30-Sep-17	\$0.00	\$58,300.00	\$58,300.00																										
DS-180600 Commissioning & operation				INFN-CSN2	INFN-NA	822	01-Oct-17*	31-Dec-19	\$0.00	\$88,000.00	\$88,000.00																										
DarkSide.1.08.01 GAP-TPC						1368	01-Jan-17	29-Sep-20	\$0.00	\$726,600.00	\$726,600.00																										
DS-180310 TPC & Cryogenics				INFN-CSN2	INFN-NA	730	01-Jan-17*	31-Dec-18	\$0.00	\$185,900.00	\$185,900.00																										
DS-180320 FE & DAQ				INFN-CSN2	INFN-NA	1095	01-Jan-17*	31-Dec-19	\$0.00	\$25,300.00	\$25,300.00																										
DS-180330 Slow Control				INFN-CSN2	INFN-GE	365	01-Jan-17*	31-Dec-17	\$0.00	\$15,400.00	\$15,400.00																										
DS-180340 Offsite calibration				DOE	BNL	365	01-Oct-19*	29-Sep-20	\$0.00	\$500,000.00	\$500,000.00																										
DarkSide.1.09 DarkSide Proto						1006	01-Apr-18	31-Dec-20	\$0.00	\$895,400.00	\$895,400.00																										
DS-191000 Integration				INFN-CSN2	INFN-NA	669	01-Sep-18*	30-Jun-20	\$0.00	\$67,100.00	\$67,100.00																										
DS-192000 DAQ				INFN-CSN2	INFN-Roma1	457	01-Apr-19*	30-Jun-20	\$0.00	\$132,000.00	\$132,000.00																										
DS-193000 Calibration Setup				INFN-CSN2	INFN-NA	305	01-Jun-19*	31-Mar-20	\$0.00	\$60,500.00	\$60,500.00																										
DS-194000 Commissioning				INFN-CSN2	INFN-NA	366	01-Oct-19*	30-Sep-20	\$0.00	\$55,000.00	\$55,000.00																										
DS-195000 Operation				INFN-CSN2	INFN-NA	366	01-Jan-20*	31-Dec-20	\$0.00	\$508,200.00	\$508,200.00																										
DS-196000 Cryostat				INFN-CSN2	INFN-Roma1	183	01-Apr-18*	30-Sep-18	\$0.00	\$72,600.00	\$72,600.00																										
DarkSide.1.10 Outer Cryostat						1297	11-Oct-18	29-Apr-22	\$0.00	\$10,111,200.00	\$10,111,200.00																										
DS-110100 Warm Structure				INFN-PON	CERN	813	11-Oct-18*	31-Dec-20	\$0.00	\$2,299,000.00	\$2,299,000.00																										
DS-110200 Cold Cryostat				INFN-PON	CERN	962	15-May-19*	31-Dec-21	\$0.00	\$4,160,200.00	\$4,160,200.00																										
DS-110300 Cryogenics System				INFN-PON	UCLA	698	01-Jun-20*	29-Apr-22	\$0.00	\$2,552,000.00	\$2,552,000.00																										
DS-110300_1 Procurement of 100 Tonnes of AAR				GSSI	GSSI	731	01-Jan-20*	31-Dec-21	\$0.00	\$1,100,000.00	\$1,100,000.00																										
DarkSide.1.11 Infrastructures						1096	01-Oct-19	30-Sep-22	\$0.00	\$811,487.00	\$811,487.00																										
A1130 Princeon-Gran Sasso SummerSchool at Princeton				NSF-Mid-scale	Princeton	1096	01-Oct-19*	30-Sep-22	\$0.00	\$12,654.00	\$12,654.00																										
A1140 Princeon-Gran Sasso SummerSchool at FLC				NSF-Mid-scale	Fort Lewis	1096	01-Oct-19*	30-Sep-22	\$0.00	\$197,733.00	\$197,733.00																										
DS-411000 Safety Analysis				INFN-CSN2	LNGS	274	01-Oct-19*	30-Jun-20	\$0.00	\$55,000.00	\$55,000.00																										
DS-412100 Building				INFN-PON	LNGS	273	01-Jan-21*	30-Sep-21	\$0.00	\$225,500.00	\$225,500.00																										
DS-412500 Storage @ LNGS				CFI-DarkSide	Carleton	214	01-Jun-21*	31-Dec-21	\$0.00	\$320,600.00	\$320,600.00																										
DarkSide.2 Urania						1321	01-Jul-17	13-Oct-22	\$3,597,453.73	\$20,574,940.23	\$24,172,393.96																										
DarkSide.2.01 Urania Project Management Oversight						751	01-Oct-19	30-Sep-22	\$945,465.89	\$58,893.65	\$1,004,359.55																										
DS-200000 Project Management for FY20				DOE	BNL	251	01-Oct-19*	30-Sep-20	\$0.00	\$165,275.84	\$165,275.84																										
DS-200010 Project Controls for FY20				DOE	BNL	251	01-Oct-19*	30-Sep-20	\$86,245.15	\$0.00	\$86,245.15																										
DS-200030 Travel for FY20				DOE	BNL	251	01-Oct-19*	30-Sep-20	\$0.00	\$11,574.18	\$11,574.18																										
DS-200040 Project Management for FY21				DOE	BNL	250	01-Oct-20	30-Sep-21	\$211,062.88	\$0.00	\$211,062.88																										
DS-200050 Project Controls for FY21				DOE	BNL	250	01-Oct-20	30-Sep-21	\$88,228.79	\$0.00	\$88,228.79																										
DS-200060 Safety Oversight for FY21				DOE	BNL	250	01-Oct-20	30-Sep-21	\$49,090.98	\$0.00	\$49,090.98																										
DS-200070 Travel for FY21				DOE	BNL	250	01-Oct-20	30-Sep-21	\$0.00	\$23,390.75	\$23,390.75																										
DS-200080 Project Management for FY22				DOE	BNL	250	01-Oct-21	30-Sep-22	\$189,656.46	\$0.00	\$189,656.46																										
DS-200090 Project Controls for FY22				DOE	BNL	250	01-Oct-21	30-Sep-22	\$50,462.46	\$0.00	\$50,462.46																										
DS-200100 Safety Oversight for FY22				DOE	BNL	250	01-Oct-21	30-Sep-22	\$105,443.33	\$0.00	\$105,443.33																										
DS-200110 Travel for FY22				DOE	BNL	250	01-Oct-21	30-Sep-22	\$0.00	\$23,928.72	\$23,928.72																										
DarkSide.2.02 Urania Plant Fabrication and Delivery						1308	01-Jul-17	28-Jan-21	\$0.00	\$9,253,900.00	\$9,253,900.00																										
DS-200200 R&D activity in support of PSA design				INFN-MIUR	INFN-NA	853	01-Jul-17*	31-Oct-19	\$0.00	\$110,000.00	\$110,000.00																										
DS-200220 Feed Characterization				PNNL-LDRD	PNNL	484	05-Jul-18*	31-Oct-19	\$0.00	\$400,000.00	\$400,000.00																										
DS-200230 Plant Design				INFN-MIUR	INFN-NA	213	01-Nov-19	31-May-20	\$0.00	\$550,000.00	\$550,000.00																										
DS-200240 Plant Construction, Performance Check and Shipment				INFN-MIUR	INFN-NA	394	01-Jan-20*	28-Jan-21	\$0.00	\$8,193,900.00	\$8,193,900.00																										
DarkSide.2.03 Urania Cortez Site Prep & Plant Installation						743	24-Sep-18	13-Sep-21	\$807,672.40	\$5,719,970.00	\$6,527,642.40																										
DarkSide.2.03.01 Project Management						485	04-Oct-19	13-Sep-21	\$246,400.00	\$750,000.00	\$996,400.00																										
DS-200320 Extraction Operations Engineering and PNNL Support				PNNL-in-Kind	PNNL	485	04-Oct-19*	13-Sep-21	\$0.00	\$750,000.00	\$750,000.00																										
DS-200330 Process Engineering Support				CFI-DarkSide	Carleton	485	04-Oct-19*	13-Sep-21	\$246,400.00	\$0.00	\$246,400.00																										
DarkSide.2.03.02 Preliminary Site Work						411	17-Jan-19	03-Sep-20	\$238,000.40	\$1,716,000.00	\$1,954,000.40																										
DS-200360 Gas Sampling and Shipping				NSF	Houston	200	17-Jan-19*	31-Oct-19	\$0.00	\$15,000.00	\$15,000.00																										

DarkSide Current										DS Layout-Work Breakdown Structure										18-May-19 12:18															
Activity ID	Activity Name	DS_Funding Source	DS_Institution	Original Duration	Start	Finish	Global Labor Cost [USD]	Global Non Labor Cost [USD]	Global Total Cost [USD]	2017				2018				2019				2020				2021				2022				2023	
										Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	DS-200510	Phase III Installation	NSF-Mid-scale	Houston	93	24-Apr-20	03-Sep-20	\$0.00	\$200,000.00	\$200,000.00																									
	DS-200520	Control Room Installation	NSF-Mid-scale	Houston	88	01-May-20	03-Sep-20	\$0.00	\$25,000.00	\$25,000.00																									
	DS-200530	Plant, electrical, storage and truck area building erection	NSF-Mid-scale	Houston	88	01-May-20	03-Sep-20	\$0.00	\$35,000.00	\$35,000.00																									
	DarkSide.2.03.03 Plant & Site Integration				241	04-Sep-20	23-Aug-21	\$76,872.00	\$1,130,570.00	\$1,207,442.00																									
	DS-200550	Plant Installation	NSF-Mid-scale	Houston	121	04-Sep-20	04-Mar-21	\$0.00	\$1,000,000.00	\$1,000,000.00																									
	DS-200560	PI for 2.02.03 Plant and Site Integration	NSF-Mid-scale	UMass	354	04-Sep-20*	23-Aug-21	\$76,872.00	\$9,570.00	\$86,442.00																									
	DS-200570	Coupling Between KM and Urania	NSF-Mid-scale	Houston	10	05-Mar-21	18-Mar-21	\$0.00	\$121,000.00	\$121,000.00																									
	DarkSide.2.03.04 Full System Start-up & Commissioning				133	08-Mar-21	13-Sep-21	\$0.00	\$1,641,000.00	\$1,641,000.00																									
	DS-200580	Plant start-up and commissioning Equipment and Tools	NSF-Mid-scale	Houston	133	08-Mar-21*	13-Sep-21	\$0.00	\$341,000.00	\$341,000.00																									
	DS-200590	Plant consumables for Start-up and Commissioning	NSF-Mid-scale	Houston	133	08-Mar-21*	13-Sep-21	\$0.00	\$1,300,000.00	\$1,300,000.00																									
	DarkSide.2.03.05 QA/QC Instrumentation Installation				743	24-Sep-18	13-Sep-21	\$246,400.00	\$482,400.00	\$728,800.00																									
	DS-200600	Procure gas analysis instrumentation	CFI-DarkSide	Carleton	206	24-Sep-18*	22-Jul-19	\$0.00	\$160,300.00	\$160,300.00																									
	DS-200610	PI for 2.02.05 QA/QC Inst Installation	CFI-DarkSide	Carleton	1086	24-Sep-18*	13-Sep-21	\$246,400.00	\$0.00	\$246,400.00																									
	DS-200620	Installation and characterization of gas analysis instrumentation	CFI-DarkSide	Carleton	537	23-Jul-19	13-Sep-21	\$0.00	\$72,100.00	\$72,100.00																									
	DS-200630	Production and Installation of large sample collections system	PNNL-in-Kind	PNNL	537	23-Jul-19	13-Sep-21	\$0.00	\$250,000.00	\$250,000.00																									
	DarkSide.2.04 Extraction				302	01-Jul-21	14-Sep-22	\$1,844,315.44	\$3,459,676.58	\$5,303,992.01																									
	DarkSide.2.04.01 Project Management				302	01-Jul-21	14-Sep-22	\$1,844,315.44	\$450,000.00	\$2,294,315.44																									
	DS-200650	Field Operations Engineering Support	DOE	BNL	261	01-Jul-21*	30-Jun-22	\$410,563.21	\$0.00	\$410,563.21																									
	DS-200660	Extraction Operations Engineering and PNNL Support	PNNL-in-Kind	PNNL	251	14-Sep-21	14-Sep-22	\$0.00	\$450,000.00	\$450,000.00																									
	DS-200670	Process Engineer	CFI-DarkSide	Carleton	251	14-Sep-21	14-Sep-22	\$123,200.00	\$0.00	\$123,200.00																									
	DS-200680	Technical Engineer	NSF	Houston	251	14-Sep-21*	14-Sep-22	\$144,000.03	\$0.00	\$144,000.03																									
	DS-200690	Plant Operations Support	DOE	BNL	261	01-Jul-21*	30-Jun-22	\$1,166,552.20	\$0.00	\$1,166,552.20																									
	DarkSide.2.04.02 Plant Operations				251	14-Sep-21	14-Sep-22	\$0.00	\$3,009,676.58	\$3,009,676.58																									
	DS-200700	Precision gas analysis	CFI-DarkSide	Carleton	251	14-Sep-21*	14-Sep-22	\$0.00	\$69,300.00	\$69,300.00																									
	DS-200710	Utilities, Consumables and Plant Maintenance	DOE	BNL	153	17-Sep-21	29-Apr-22	\$0.00	\$2,890,376.58	\$2,890,376.58																									
	DS-200720	Large Volume Sample Collection	PNNL-in-Kind	PNNL	251	14-Sep-21	14-Sep-22	\$0.00	\$50,000.00	\$50,000.00																									
	DarkSide.2.05 Storage and Shipping				1194	08-Jul-19	13-Oct-22	\$0.00	\$2,082,500.00	\$2,082,500.00																									
	DarkSide.2.05.01 Shipping and Storage Vessels Procurement				1194	08-Jul-19	13-Oct-22	\$0.00	\$1,729,000.00	\$1,729,000.00																									
	DS-200830	Procurement of shipping vessels 1-2	CFI-DarkSide	Carleton	602	08-Jul-19*	28-Feb-21	\$0.00	\$420,000.00	\$420,000.00																									
	DS-200840	Procurement of shipping vessel filling equipment	CFI-DarkSide	Carleton	602	08-Jul-19*	28-Feb-21	\$0.00	\$49,000.00	\$49,000.00																									
	DS-200860	Procurement of shipping vessels 3-5	CFI-DarkSide	Carleton	296	01-Mar-21	21-Dec-21	\$0.00	\$630,000.00	\$630,000.00																									
	DS-200870	Procurement of shipping vessels 6-8	CFI-DarkSide	Carleton	296	22-Dec-21	13-Oct-22	\$0.00	\$630,000.00	\$630,000.00																									
	DarkSide.2.05.02 Ship Product				354	25-Oct-21	13-Oct-22	\$0.00	\$353,500.00	\$353,500.00																									
	DS-200890	Shipment of first batch to Sardinia	CFI-DarkSide	Carleton	42	25-Oct-21*	05-Dec-21	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200900	Shipment of Second batch to Sardinia	CFI-DarkSide	Carleton	42	07-Dec-21	17-Jan-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200910	Shipment of third batch to Sardinia	CFI-DarkSide	Carleton	42	18-Jan-22	28-Feb-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200920	Shipment of fourth batch to Sardinia	CFI-DarkSide	Carleton	42	01-Mar-22	11-Apr-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200930	Shipment of fifth batch to Sardinia	CFI-DarkSide	Carleton	42	12-Apr-22	23-May-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200940	Shipment of sixth batch to Sardinia	CFI-DarkSide	Carleton	42	24-May-22	04-Jul-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200950	Shipment of seventh batch to Sardinia	CFI-DarkSide	Carleton	42	05-Jul-22	15-Aug-22	\$0.00	\$44,187.50	\$44,187.50																									
	DS-200960	Shipment of eighth batch to Sardinia batch																																	

DarkSide Current						DS Layout-Work Breakdown Structure										18-May-19 12:18																				
Activity ID	Activity Name	DS_Funding Source	DS_Institution	Original Duration	Start	Finish	Global Labor Cost [USD]	Global Non Labor Cost [USD]	Global Total Cost [USD]	2017					2018				2019				2020				2021				2022				2023	
										Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2				
<div></div>	DS-3124	Engineering and Review	INFN-RAS	LNGS	516	01-Feb-19*	30-Jun-20	\$0.00	\$88,000.00	\$88,000.00																										
	DS-31281	Electrical and Vacuum Components 2	INFN-RAS	LNGS	731	01-Jul-18*	30-Jun-20	\$0.00	\$33,000.00	\$33,000.00																										
	DS-3129	Residual Gas Analyzer	INFN-RAS	LNGS	154	01-May-19*	01-Oct-19	\$0.00	\$134,200.00	\$134,200.00																										
	DS-3131	Piller (UPS)	INFN-RAS	LNGS	1	01-May-20*	01-May-20	\$0.00	\$605,000.00	\$605,000.00																										
	DS-3132	Cables and Installation for Seruci-1	INFN-RAS	LNGS	1	01-May-20*	01-May-20	\$0.00	\$66,000.00	\$66,000.00																										
	DS-3133	Cryogenic Transfer Lines for Seruci-1	INFN-RAS	INFN-CA	1	01-May-20*	01-May-20	\$0.00	\$199,100.00	\$199,100.00																										
	DS-31341	Fine Tuning System	INFN-RAS	LNGS	261	15-Apr-19*	31-Dec-19	\$0.00	\$66,000.00	\$66,000.00																										
	DS-3135	Disassembling Seruci-0 + Reassembling in Seruci-1	INFN-RAS	LNGS	91	01-Mar-20*	30-May-20	\$0.00	\$110,000.00	\$110,000.00																										
	DS-3136	Nitrogen Storage for Seruci-1	INFN-RAS	LNGS	335	01-Jul-19*	30-May-20	\$0.00	\$209,000.00	\$209,000.00																										
	DS-3137	Water Coding System for Seruci-1 (Vacuum system)	INFN-RAS	LNGS	213	01-Oct-19*	30-Apr-20	\$0.00	\$40,700.00	\$40,700.00																										
	DarkSide.3.02.04 Installation Commissioning & Running					1492	01-Jan-19	31-Jan-23	\$550,000.00	\$2,370,500.00	\$2,920,500.00																									
	DS-3141	Installation Commissioning & Running Seruci-0	INFN-RAS	LNGS	214	01-Jun-19*	31-Dec-19	\$0.00	\$110,000.00	\$110,000.00																										
	DS-3142	Energy and Maintenance for Seruci-0	INFN-RAS	INFN-CA	365	01-Jan-19*	31-Dec-19	\$0.00	\$220,000.00	\$220,000.00																										
	DS-3143	Commissioning & Running Seruci-1	INFN-RAS	INFN-CA	944	01-Jun-20*	31-Dec-22	\$0.00	\$335,500.00	\$335,500.00																										
	DS-3144	argon storage facilities at Seruci	INFN-RAS	INFN-CA	1310	01-Jun-19*	31-Dec-22	\$0.00	\$55,000.00	\$55,000.00																										
	DS-3145	Energy and Maintenance for Seruci-1 purification mode	INFN-RAS	INFN-CA	944	01-Jun-20*	31-Dec-22	\$0.00	\$1,320,000.00	\$1,320,000.00																										
	DS-3146	Waste disposal	INFN-RAS	INFN-CA	944	01-Jun-20*	31-Dec-22	\$0.00	\$110,000.00	\$110,000.00																										
	DS-3147	Shipping from Seruci to LNGS	INFN-RAS	INFN-CA	396	01-Jan-22*	31-Jan-23	\$0.00	\$220,000.00	\$220,000.00																										
	DS-3148	Personnel on Shift	INFN-RAS	INFN-CA	1341	01-Jun-19	31-Jan-23	\$550,000.00	\$0.00	\$550,000.00																										
	DarkSide.3.03 DArT in ArDM					961	28-Feb-19	30-Dec-22	\$85,800.00	\$523,700.00	\$609,500.00																									
	DS-327	Acrylic machining	CFI-DarkSide	Carleton	62	28-Feb-19*	30-Apr-19	\$0.00	\$1,400.00	\$1,400.00																										
	DS-328	Clean TPB-coatings	CFI-DarkSide	Carleton	62	01-May-19*	01-Jul-19	\$0.00	\$1,400.00	\$1,400.00																										
	DS-329	Acrylic machining radio-pure	CFI-DarkSide	Carleton	31	30-Nov-19*	30-Dec-19	\$0.00	\$1,400.00	\$1,400.00																										
	DS-330	Clean TPB-coatings radio-pure	CFI-DarkSide	Carleton	31	31-Dec-19*	30-Jan-20	\$0.00	\$1,400.00	\$1,400.00																										
	DS-331	Cryogenics and gas system DART	INFN-RAS	INFN-CA	31	30-Apr-19*	30-May-19	\$0.00	\$132,000.00	\$132,000.00																										
	DS-3331	DART Integration and tests	Spain	CIEMAT	119	02-Jul-19*	23-Dec-19	\$33,000.00	\$0.00	\$33,000.00																										
	DarkSide.3.03.03 DART					62	30-Apr-19	30-Jun-19	\$52,800.00	\$27,500.00	\$80,300.00																									
	DS-323	machining DART (in kind)	Spain	CIEMAT	1	30-Apr-19*	30-Apr-19	\$33,000.00	\$0.00	\$33,000.00																										
	DS-324	cleaning DART (in kind)	Spain	CIEMAT	31	01-May-19*	31-May-19	\$19,800.00	\$0.00	\$19,800.00																										
	DS-325	Slow Control DART	INFN-RAS	UNICA	62	30-Apr-19*	30-Jun-19	\$0.00	\$16,500.00	\$16,500.00																										
	DS-326	Front-end DART	INFN-RAS	LNGS	31	30-Apr-19*	30-May-19	\$0.00	\$11,000.00	\$11,000.00																										
	DarkSide.3.03.04 ArDM single phase refurbishing					92	30-Apr-19	30-Jul-19	\$0.00	\$38,500.00	\$38,500.00																									
	DS-332	infrastructure update at LSC (in kind)	ETHZ	ETHZ	31	30-Jun-19*	30-Jul-19	\$0.00	\$5,500.00	\$5,500.00																										
	DS-333	new single phase setup design and assembly ArDM	ETHZ	ETHZ	62	30-Apr-19*	30-Jun-19	\$0.00	\$33,000.00	\$33,000.00																										
	DarkSide.3.03.05 DART Integration and tests					244	30-Apr-19	29-Dec-19	\$0.00	\$46,200.00	\$46,200.00																									
	DS-334	purchases DART integration	INFN-RAS	INFN-CA	31	30-Apr-19*	30-May-19	\$0.00	\$11,000.00	\$11,000.00																										
	DS-335	purchases DART integration	Spain	CIEMAT	31	30-Apr-19*	30-May-19	\$0.00	\$11,000.00	\$11,000.00																										
	DS-336	travel from INFN DART integration	INFN-RAS	INFN-CA	57	02-Jul-19*	27-Aug-19	\$0.00	\$11,000.00	\$11,000.00																										
	DS-337	Transportation to LSC DART	INFN-RAS	INFN-CA	6	23-Dec-19*	29-Dec-19	\$0.00	\$13,200.00	\$13,200.00																										
	DarkSide.3.03.06 DAQ and trigger					92	30-Apr-19	30-Jul-19	\$0.00	\$42,900.00	\$42,900.00																									
	DS-338	trigger integration	Spain	Zaragoza Un	92	30-Apr-19*	30-Jul-19	\$0.00	\$5,500.00	\$5,500.00																										
	DS-339	DAQ integration	INFN-RAS	Zaragoza Un	92	30-Apr-19*	30-Jul-19	\$0.00	\$37,400.00	\$37,400.00																										
	DarkSide.3.03.07 Lead belt structure					276	30-Apr-19	30-Jan-20	\$0.00	\$38,500.00	\$38,500.00																									
	DS-340	Lead purchase in kind	Spain	LSC	245	30-Apr-19*	30-Dec-19	\$0.00	\$33,000.00	\$33,000.00																										
	DS-341	Leadstructure and belt installation	Spain	CIEMAT	31	31-Dec-19*	30-Jan-20	\$0.00	\$5,500.00	\$5,500.00																										
	DarkSide.3.03.08 Assembly and operation at LSC and argon shipping					1250	30-Jul-19	30-Dec-22	\$0.00	\$71,500.00	\$71,500.00																									
	DS-343	travel from CIEMAT to LSC	Spain	CIEMAT	1250	30-Jul-19*	30-Dec-22	\$0.00	\$5,500.00	\$5,500.00																										
	DS-344	travel from INFN TO LSC	INFN-RAS	INFN-CA	12																															