

COST-ESTIMATES FOR THE ARIEL-II TARGET STATION

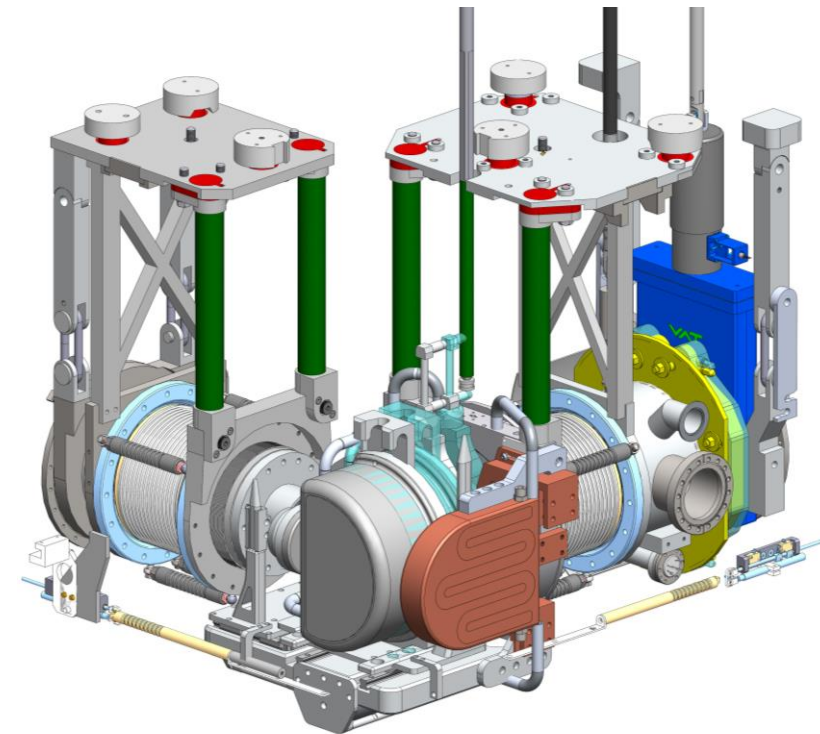
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Agenda

- Breakdown of WBS 1, **AETE** infrastructure and development.
- Summarize spending YTD and compare with overall project budget

Target Module (WBS 1.1)

- Includes complex assemblies such as the **Target & Ion Source Front End, HV Feedthrough, Vacuum & Gas Management System, TS Structural Support, HTV**
- Budgeted at **\$ 2,138K**
 - **\$ 2,173K** in WBS 1.11
- Design is in a mature state due to leverage from ISOLDE, some **high risk** items remain.



Target Module Breakdown (WBS 1.1)

WBS ID	ITEM	BUDGETED	RISK
1.1.1	Target Module ¹	\$ 883.7 K	MODERATE
1.1.2	Services Disconnect	\$ 23.47 K	HIGH
1.1.3	HV Chase Panel	\$ 29 K	HIGH
1.1.4	Converter Module	\$ 292.7 K	VERY LOW
1.1.5	Target Station Structural Support	\$ 69.09 K	LOW
1.1.7	Vacuum & Gas Management system	\$ 255.03 K	HIGH
1.1.8	Passive Plug	\$ 135.63 K	LOW
1.1.9	Hermetic Target Vessel	\$ 333.5 K	VERY LOW
1.1.10	Converter Test Facility	\$ 115.92 K	LOW

¹**Includes:** Shielding plug (\$ 213K), *Front End* (\$ 182K), HV Feedthrough (\$ 389.6K)

Driver Beam Instrumentation (WBS 1.2)

- Includes diagnostics, pumping station, vacuum envelope, & driver beam linear raster.
- Currently budgeted **\$ 340K**
- **Low risk**, some items leverage existing designs.
- Solutions exciting, or well understood

High Voltage Terminal (WBS 1.3)

- Includes ground potential racks, HV services chase, HV terminal enclosure, ground service chase
- Includes components in the electrical services room.
- Currently budgeted at **\$ 485K**
- **Low risk**

AETE Infrastructure (WBS 1.5)

- Cooling systems, decay storage tanks, nuclear ventilation, ALCW (active low conductivity water).
- Currently budgeted at \$ **555K**
- All items well understood
- **Low risk**

Safety Systems (WBS 1.7)

- Includes radiation monitoring systems, air monitoring system, access control system
- Currently budgeted at \$ **276 K**
- **Low risk**

ARIEL Laser Ion Source (WBS 1.9)

- Includes laser room, lasers, controls & diagnostics, optics.
- Well understood solutions in progress.
- Currently budgeted at **\$ 1,198K**.
- Laser room: electrical work (~ **40K**) remaining.
- **Low risk**

P2 Safety Systems (WBS 1.10)

- Additional safety systems for Phase 2.
- Covers air monitoring systems
- **Low risk**
- Currently budget at **\$ 74K**

Overall Budget and Summary

ITEM	TOTAL COST
P1 ARIEL Electron Target East (AETE)	\$ 2,138,084
P1 Driver Beam Instrumentation (AETE)	\$ 339,754
P1 High Voltage Terminal (AETE)	\$ 485,359
P1 AETE Infrastructure	\$ 555,436
P1 Safety Systems	\$ 275,753
P2 ALIS: ARIEL Laser Ion Source	\$ 1,197,824
P2 Safety Systems	\$ 73,835
Total	\$ 5,066,045

Account	Account (T)	SubAccount	Fund	ExpendType	Budget	Line of Credit	Balance on Account	Requisitioned	Ordered	Received	Reservation	Total Encumbrances	Spent	Available	Percent Remaining
7456	P1 ARIEL TARGET ELECTRON(AETE)				1,729,891.47	0.00	0.00	0.00	6,528.65	1,792.73	0.00	8,321.37	90,247.04	1,631,323.06	94.30
7457	P1 DRIVER BEAM INSTRUMNT(AETE)				339,754.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	339,754.09	100.00
7458	P1 HIGH VOLTAGE TERMINAL(AETE)				467,141.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	467,141.82	100.00
7460	P1 SERVICES & STORAGE (AETE)				554,668.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	206.52	554,462.00	99.96
7462	P1 SAFETY SYSTEMS				204,222.65	0.00	0.00	0.00	0.01	0.00	0.00	0.01	62,589.01	141,633.63	69.35
7464	P2 ALIS:ARIEL LASER ION SOURCE				802,862.71	0.00	0.00	0.00	23,233.48	62,112.05	0.00	85,345.53	434,375.25	283,141.93	35.27
7465	P2 SAFETY SYSTEMS				73,834.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73,834.73	100.00

Thank you
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