

KOPIO WBS Dictionary

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1.2.1

WBS Number	Description
1.2.1	KOPIO Vacuum Subsystem
1.2.1.1	U/S Vacuum Decay Vessel The scope of effort is the engineering, design and procurement of the upstream composite material decay vacuum vessel internal to the Photon Veto Detector. It includes a pre-construction funded prototype effort along with a multi-phase design, protot...
1.2.1.1.1	System Development, Prototype & Test This is a pre-construction System Development effort to produce (5) 1/5 scale prototype vessels. The vessels will be tested to failure as a QA of FEA buckling analysis. This includes the cost of engineering, design, and travel as detailed and vendor cost through contr...
1.2.1.1.1.1	Engineering
1.2.1.1.1.2	Design
1.2.1.1.1.3	Procurement (KOMPOZIT)
1.2.1.1.1.4	Acceptance Test
1.2.1.1.1.4.1	Travel
1.2.1.1.2	Vessel Design and Procurement This a multi-phase engineering and procurement effort to design, prototype and test both scale and full scale composite vessel designs leading to procurement of final operational vessel. Basis of estimate; engineering estimate for engineering and desig...
1.2.1.1.2.1	Phase 1 (1/5 Scale) Prototype & Test

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WBS Number	Description
	This task calls for the mature engineering, design and procurement of (5) 1/5 scale u/s decay vacuum vessels to be tested for structural stability. It requires a complete design effort and analysis of the vacuum vessel based on geometry required to acc...
1.2.1.1.2.1.1	Engineering
1.2.1.1.2.1.2	Design
1.2.1.1.2.1.3	Procurement (KOMPOZIT)
1.2.1.1.2.1.4	Acceptance Test
1.2.1.1.2.1.4.1	Travel
1.2.1.1.2.2	Phase 2 (Full Scale) Prototype & Test
	This task calls for the final engineering, design and procurement of full scale u/s decay vacuum vessels to be tested for structural stability. It requires a complete design effort and analysis of the vacuum vessel based on geometry required to accomod...
1.2.1.1.2.2.1	Engineering
1.2.1.1.2.2.2	Design
1.2.1.1.2.2.3	Procurement (KOMPOZIT)
1.2.1.1.2.2.4	Acceptance Test
1.2.1.1.2.2.4.1	Travel
1.2.1.1.2.3	Phase 3 (Final) Vessel
	This task calls for the engineering, design and procurement of the operational u/s decay vacuum vessel and testing for structural stability and vacuum performance. It requires engineering and design effort and analysis of the vacuum vessel as oversight...
1.2.1.1.2.3.1	Engineering
1.2.1.1.2.3.2	Design
1.2.1.1.2.3.3	Procurement (KOMPOZIT)

WBS	Description
Number	Description
1.2.1.1.2.3.4	Acceptance Test
1.2.1.1.2.3.4.1	Travel
1.2.1.1.2.3.5	Fabrication
1.2.1.1.2.3.5.1	Feed-thru Support Rings
1.2.1.1.2.3.5.2	Installation Fixtures
1.2.1.2	Vacuum Transitions The scope of effort includes both an internal high vacuum membrane for the u/s decay vessel and vacuum windows both u/s & d/s of the vessel. The membrane will define the boundary between high vacuum for the neutral beam and rough vacuum for the Charged...
1.2.1.2.1	Vacuum Transition Membrane
1.2.1.2.1.1	Prototype This is an engineering estimate of the scope of effort required to produce a working prototype of an internal vacuum membrane, which is a flexible vacuum bag in a vacuum vessel. There is time allotted for engineering, design, procurement of materials and...
1.2.1.2.1.1.1	Engineering
1.2.1.2.1.1.2	Design
1.2.1.2.1.1.3	Procurement
1.2.1.2.1.1.4	Assemble and Test
1.2.1.2.1.2	Operational Membrane This is an engineering estimate of the scope of effort required to produce a working model of an internal vacuum membrane, which is a flexible vacuum bag in a vacuum vessel. There is time allotted for engineering, design, procurement of materials and fix...
1.2.1.2.1.2.1	Engineering
1.2.1.2.1.2.2	Design

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WBS	
Number	Description
1.2.1.2.1.2.3	Procurement
1.2.1.2.1.2.4	Fabricate and Test
1.2.1.2.2	U/S & D/S Transition Windows <p>This is an engineering estimate for the engineering, design, procurement of materials and parts, and fabrication of the u/s & d/s vacuum windows of the u/s decay vessel.</p>
1.2.1.2.2.1	Engineering
1.2.1.2.2.2	Design
1.2.1.2.2.3	Procurement
1.2.1.2.2.4	Fabrication
1.2.1.3	D4 Vacuum Box <p>This is an engineering estimate for the engineering, design, procurement of materials and parts, and fabrication of the D4 vacuum box. This vacuum box is located in the magnetic gap of the D4 sweeping magnet d/s of the Calorimeter Detector and u/s of t...</p>
1.2.1.3.1	Engineering
1.2.1.3.2	Design
1.2.1.3.3	Procurement
1.2.1.3.4	Fabrication
1.2.1.4	Downstream Veto Vacuum Tank <p>This is and engineering estimate for the engineering, design procurement of materials and parts, and fabrication of the d/s Veto Vacuum Tank. This is a large volume vessel with internal veto counters that can be of a heavy structural design for bucklin...</p>
1.2.1.4.1	Engineering
1.2.1.4.2	Design

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WBS Number	Description
1.2.1.4.3	Procurement
1.2.1.4.4	Fabrication
1.2.1.4.5	Sub-assembly
1.2.1.5	Vacuum Pumping Station This is an engineering estimate from the C-A Vacuum Group for the engineering, design, procurement, fabrication, unit assembly, and test of the decay volume vacuum pumping station. It will also include all piping connections, controls, and interlocks f...
1.2.1.5.1	Engineering
1.2.1.5.2	Design
1.2.1.5.3	Procurement
1.2.1.5.4	Fabrication
1.2.1.5.5	Sub-assembly
1.2.1.6	Management Activities This is an engineering estimate for the management of this subsystem. It calls for scientist and project engineer to develop, implement, manage, and report on the monthly activities of all resources involved in this subsystem. The will be responsible f...
1.2.1.6.2	Manager
1.2.1.6.3	Engineering
1.2.1.6.4	MSTS
1.2.1.7	Management Activities This is an engineering estimate for the management of this subsystem. It calls for scientist and project engineer to develop, implement, manage, and report on the monthly activities of all resources involved in this subsystem. The will be responsible f...
1.2.1.7.2	Manager

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WBS Number	Description
1.2.1.7.3	Engineering
1.2.1.7.4	MSTS