No.	Milestone	Deliverable	associated KPIs	Responsible organisations	Date of Delivery	FTE	Hard cost	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	FTE per task
Governance and management						**0.53**	**$75,000**	**2.0**	**1.2**	**0.7**	**0.2**	**0.5**	**0.2**	**0.2**	**0.2**	**0.5**	**0.2**	**0.2**	**0.2**	**0.5**
MS1	AusSeabed Governance	Executive Board and Steering committee meetings - this includes secretariat duties		GA	*3/yr*	0.28		0.5	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.28
MS2	Collaborative Head Agreement signed	A signed collaboration agreement that will facilitate collaboration to ensure AusSeabed is an enduring solution	1. Continued and diversified investment support from key stakeholders and end-users	GA/AIMS/CSIRO/AAD/ AHO	*Sep-20*	0.00														0.00
MS3	Project Agreement between GA and AHO signed	A 4-yr agreement between GA and AHO for AusSeabed infrastructure development and operational HIPP data delivery	1. Continued and diversified investment support from key stakeholders and end-users	GA/AHO	*Dec-20*	0.00														0.00
MS4	Project Agreements between AusSeabed stakeholders signed	Necessary agreements and contracts (TBD) put in places to ensure efficient delivery of the FY2020/2021 work plan	1. Continued and diversified investment support from key stakeholders and end-users	TBD	*TBD*	0.00														0.00
MS5	Economic Benefit Analysis	EBA specific to seabed mapping in Australia		GA/CSIRO/AHO	*Jul-20*	0.13	$75,000	1.0	0.5											0.13
MS6	ARDC data call proposal submitted	A multi-partner proposal submitted to the ARDC call for National data collection	1. Continued and diversified investment support from key stakeholders and end-users	GA lead and TBD	*Oct-20*	0.13		0.5	0.5	0.5										0.13
Engagement and communication						**1.00**	**$30,000**	**2.0**	**2.0**	**2.0**	**2.0**	**1.0**	**0.5**	**0.0**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1.00**
MS7	Stakeholder engagement and communication strategy endorsed by SC	A strategic document that focuses on identifying and prioritising stakeholders	1. Continued and diversified investment support from key stakeholders and end-users	SC (GA, WA DoT, NSW)	*Jul-20*	0.04		0.5												0.04
MS8	SC membership diversified through addition of various sector end-user representative	Nomination of government and industry end-users resulting from engagement to promote benefits of being on the Steering Committee	1. Continued and diversified investment support from key stakeholders and end-users	SC	*Jul-20*	0.00														0.00
MS9	End-user workshop report with implementation plan for WA IMSA-Auseabed collaboration and roadmap to scale up nationally delivered	1) Workshop scoping IMSA stakeholder needs and priorities, and how AusSeabed could deliver added benefits to he IMSA process	2. Workshop outcome reports and associated implementation plans are delivered 4. Increased number of datasets from various sources submitted to AusSeabed data hub that are consistent with AusSeabed guidelines	GA/WA DoT/WAMSI	*Jul-20*	0.21	$10,000	1.0												0.08
		2) Workshop Report and associated project scope document providing a priority list of deliverables against an agreed list of criteria and technical			*Aug-20*				1.0											0.08
		3) Implementation plan to deliver outcomes, which will be addressed in the infrastructure theme milestones			*Sep-20*					0.5										0.04
MS10	End-user workshop report with implementation plan for 2nd target stakeholder and roadmap to scale up nationally (State managers)	1) Workshop scoping stakeholder needs and priorities for services to be delivered on AusSeabed platform	2. Workshop outcome reports and associated implementation plans are delivered 7. AusSeabed tools are used by key stakeholders and end-users	GA/NSW/Deakin/WA/ Victoria	*Oct-20*	0.21	$10,000				1.0									0.08
		2) Workshop report and associated project scope providing a priority list of deliverables against an agreed list of criteria and technical requirements			*Nov-20*							1.0								0.08
		3) Implementation plan to deliver outcomes, which will be addressed in the infrastructure theme milestones			*Dec-20*								0.5							0.04
MS11	Report from annual community engagement and uptake workshop published on AusSeabed	1) Annual training and feedback workshop to promote uptake of various AusSeabed products and initiatives	2. Workshop outcome reports and associated implementation plans are delivered 7. AusSeabed tools are used by key stakeholders and end-users	SC	*Jul-20*	0.08	$10,000	0.5												0.04
		2) Workshop report with implementation plan published on the ASB website adressed in Infrastructure theme (>MS17)			*Aug-20*				0.5											0.04
MS12	Bathymetric guidelines for multiple sensor types available on AusSeabed website	1) Bathymetry lidar guideline	4. Increased number of datasets from various sources submitted to AusSeabed data hub that are consistent with AusSeabed guidelines	GA, AHO, FrontierSI, Fugro, Guardian Geo	*Oct-20*	0.25				0.5	0.5									0.08
		2) Satellite-derived bathymetry		GA, AHO, EOMAP, Guardian Geo	*Oct-20*					0.5	0.5									0.08
		3) Crowd-sourced bathymetry (singlebeam sonar)		GA, AHO, JCU, Guardian Geo	*Jun-21*										0.5	0.5				0.08
MS13	Communication piece delivered through appropriate media	1) Communication plan 2) Communication piece		SC	*Jun-21*	0.21			0.5	0.5							0.5	0.5	0.5	0.21
Accessible data and layers						**2.04**	**$15,000**	**1.0**	**2.0**	**2.0**	**2.0**	**3.0**	**2.5**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.04**
MS14	National seabed mapping priorities map revisited and delivered on the portal coordinating with HIPP review panel meeting in Oct 20	1) Stakeholder workshop to identify national prioritisation process for seabed mapping activities	2. Workshop outcome reports and associated implementation plans are delivered 3. Increased number of recognised processes relying on AusSeabed products and services 7. AusSeabed tools are used by key stakeholders and end-users	GA/AHO	*Oct-20*	0.29	$10,000		1.0											0.08
		2) Workshop report providing requirements and process for prioritisation			*Oct-20*					0.5										0.04
		3) Compilation of individual stakeholder priorities through the AusSeabed Coordination tool and a national prioritisation map according to process			*Oct-20*					0.5										0.04
		4) Develop national prioritisation tool according to requirements listed in 2 (MS17)			*Dec-20*							1.0	0.5							0.13
MS15	Multibeam datasets with capability to be processed to the Ellipsoid accessible on portal, then datasets without ellipsoid capability will be processed	GA and MNF multibeam data that can be processed to the Ellipsoid are reprocessed, QAd according to AusSeabed with report produced and accessible on portal, then data that can't be processed to the Ellipsoid will start being processed to tidal datum	5. Increased number of datasets accessible through the AusSeabed data hub	GA/CSIRO	*Jun-21*	1.00	$5,000	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00

MS16	HIPP data available on AusSeabed portal	HIPP data ingested through GA local hub and made available through portal	3. Increased number of recognised processes relying on AusSeabed products and services 5. Increased number of datasets accessible through the AusSeabed data hub	GA/AHO	*Jun-21*	0.75					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.75
Infrastructure development						**5.98**	**$135,000**	**5.3**	**6.3**	**5.5**	**5.8**	**4.5**	**4.5**	**6.8**	**7.5**	**7.0**	**6.5**	**6.0**	**6.3**	**6.0**
MS17	AusSeabed Coordination Tool used on a regular-basis by stakeholders and outputs displayed live on portal	1) Specific training to key stakeholers to encourage and support utilisation of the tool	3. Increased number of recognised processes relying on AusSeabed products and services 7. AusSeabed tools are used by key stakeholders and end-users	GA/FrontierSI	*Aug-20*	0.21	$5,000		0.3											0.02
		2) User feedback engagement accompanied with outcome reports providing a prioritised list of changes required to better service the community			*Feb-21*										0.3	0.5				0.06
		3) New release of Coordination tool			*Apr-21*												0.5	0.5	0.5	0.13
MS18	Package services for multibeam data submission used by key stakeholders	1) Scope file packaging tool business and technical requirements through stakeholder workshop	2. Workshop outcome reports and associated implementation plans are delivered 3. Increased number of recognised processes relying on AusSeabed products and services 4. Increased number of data submitted to AusSeabed data hub that are consistent with	GA/FrontierSI/AHO	*Dec-20*	0.38							0.5							0.04
		2) Workshop report providing requirements and implementation plan			*Dec-20*								0.5	0.5						0.08
		3) File packaging tool on AusSeabed website and through ASB GitHub organisation			*Dec-20*									1.0	1.0	1.0				0.25
MS19	QA services for multibeam data is used by key stakeholders	1) QA tool for multibeam data (raw and gridded for most common and open data format agreed by AusSeabed) available as desktop application on the AusSeabed website, the AusSeabed GitHub repository and synced with CCOM/NOAA public repositories	3. Increased number of recognised processes relying on AusSeabed products and services 6. Decreased turnaround time in making data discoverable and/or accessible on the AusSeabed data portal	GA/FrontierSI/AHO/ CSIRO	*Jul-20*	0.33	$10,000	1.0	1.0	1.0										0.25
		2) Key Stakeholders training	7. AusSeabed tools are used by key stakeholders		*Aug-20*				0.3	0.3				0.3	0.3					0.08
MS20	Automated processing pipeline for multibeam data used to deliver standardised processed datasets	1) Scoping document identifying requirements (software, platform) and implementation plan for delivering MBES datasets according to AusSeabed standards	2. Workshop outcome reports and associated implementation plans are delivered 6. Decreased turnaround time in making data discoverable and/or accessible on the AusSeabed data portal	GA/CSIRO/AHO	*Jul-20*	0.44		0.5	0.5											0.08
		2) First iteration of automation processing pipeline delivered according to implementation above and code published through ASB GitHub			*Oct-20*			0.8	1.3	1.3	1.0									0.35
MS21	Distributed Data Warehouse connecting GA, CSIRO and IMSA as 'local hubs' allowing data access to data 24/7 through AusSeabed portal	1) 2-3 'local hubs' connected and delivering consistent data through portal along with the technical capability to connect with other hubs when and if required. This includes reporting and monitoring capabilities	3. Increased number of recognised processes relying on AusSeabed products and services 4. Increased number of datasets from various sources submitted to AusSeabed data hub that are consistent with AusSeabed guidelines	GA/CSIRO/IMSA/ AODN	*Dec-20*	1.08	$100,000	2.0	2.0	2.0	1.5	1.5	1.0							0.83
		2) AusSeabed data available through the AODN portal			*Mar-21*									1.0	1.0	1.0				0.25
MS22	AusSeabed portal delivering services according to key stakeholders, in particular industry, and estate manager and policy maker	Delivering functionalities identified from user engagement in milestones 8 and 9	7. AusSeabed tools are used by key stakeholders and end-users	GA	*Mar-21*	0.38								1.0	1.0	1.0	0.5	0.5	0.5	0.38
MS23	Capability for bathymetric compilation-on-the-fly made available to stakeholders	1) Host a technical workshop to scope capabilities of the Global Multi-resolution Topography (GMRT) platform and process to meet the needs of AusSeabed for compilation-on-the-fly	2. Workshop outcome reports and associated implementation plans are delivered	GA/LDEO/ Deakin/CSIRO	*Oct-20*	0.75	$15,000				1.0									0.08
		2) Scoping document reflecting workshop outcomes and if necessary, business and technical requirements for adoption with implementation plan			*Dec-20*							0.8	0.3							0.08
		3) Possibly host visiting scientists and developers from Lamont-Doherty Earth Observation (LDEO) for an extended period (3-4 weeks) to commence development of the capability			*Feb-21*									2.0	2.0					0.33
		4) Prototype functionality available as per findings and recommendations			*Apr-21*										1.0	1.0	1.0			0.25
MS24	Crowd-sourced bathymetry (CSB) incorporated into AusSeabed Data Hub (caring in 21/22)	1) Workshop to define requirements and priorities with outcome report and implementation plan for all hub components (QA, warehouse, processing, portal)	2. Workshop outcome reports and associated implementation plans are delivered 3. Increased number of recognised processes relying on AusSeabed products and services 4. Increased number of datasets from various sources submitted to AusSeabed data hub that are consistent with AusSeabed guidelines 5. Increased number of datasets accessible through the AusSeabed data hub	GA/FrontierSI/AHO/ JCU/AHO	*Mar-21*	0.73	$5,000									1.0	0.5			0.13
		2) QA and package services associated with CSB added to existing desktop MBES tools and delivered via ASB website and GitHub organisation, and synced with CCOM/NOAA public repositories			*Jun-21*											0.5	1.0	1.0	0.21
		3) Key stakeholder training			*Jun-21*													0.3	0.02
		4) Data warehouse accepting and publishing JCU node data on portal			*Jun-21*												1.0	1.0	0.5	0.21
		5) Expansion of MBES processing pipeline		GA/CSIRO/AHO/ JCU	*Jun-21*												0.5	1.0	0.5	0.17

MS25	QA and packaging services cloud enabled and reviewed for all bathymetry data type	1) Cloud enablement of the QA service for integration into the seamless AusSeabed platform delivered via ASB GitHub organisation or as agreed with NOAA	3. Increased number of recognised processes relying on AusSeabed products and services 6. Decreased turnaround time in making data discoverable and/or accessible on the AusSeabed data portal	GA/FrontierSI/ CSIRO/AHO	*Dec-21*	0.40					1.3	1.3	1.3								0.31
		2) 360 review of the QA and package tool with recommendation report and implementation plan for next iteration			*Jun-21*													0.5	0.5	0.08
MS26	Data Warehouse delivering all major bathymetry data types and connected to terrestrial data hub (ELVIS)	Provide data management for all levels of bathymetry processed data type from multiple local hubs, including connection to terrestrial topographic data repository (ELVIS) and integration with international hub, i.e. IHO DCDB	3. Increased number of recognised processes relying on AusSeabed products and services 5. Increased number of datasets accessible through the AusSeabed data hub	GA/CSIRO/AHO/AAD/ AODN	*Jun-21*	0.21											0.5	1.0	0.5	0.5	0.21
MS27	Annual report delivered	Draft report submitted to SC for release in July 21		GA/CSIRO/AHO/SC	*Jun-21*	0.08														1.0	0.08
	Operation	Includes maintenance and operation activities once any part of the infrastructure is in place.		GA/CSIRO	*Jun-21*	1.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00
					Total	**9.55**	**$255,000**	**10.25**	**11.45**	**10.20**	**9.95**	**9.00**	**7.70**	**8.95**	**10.20**	**10.00**	**9.20**	**8.70**	**8.95**	**9.55**	

	Travel	Estimated cost for workshop, training, work planning
MS21	Storage and Egress	Estimated Cost associated with having data stored into AWS or NCI and downloading