	VIDEO TAG 901603		CORE ANNOTATION 500055	MACHINE LEARNING for IMAGERY potentially a new, separate project in the future	ROV Camera Upgrades 901900
Core functions	**Lead strategic vision/plan for a sustainable institutional video program at MBARI:** **Video acquisition** **Video curation** **Video life cycle/data policy** **Video analysis** **Image Machine learning**	**>>>**	**Video recording (M3RS)** **Video curation (management + storage) (M3)** **VARS software** **Annotation policy, methods, implementation** **Ancillary functions (DSG, Embargos, QC/QA)**	**Machine learning tool development for internal imagery analysisys work/ problems**	**ROV camera selection** **ROV integration > acquisition**
Core Team	Duane Edgington Danelle Cline Nancy Jacobsen Stout Lonny Lundsten Todd Ruston Mark Chaffey Management Team (Doug Au, Jim Barry, others as needed)		Nancy Jacobsen Stout Brian Schlining (VARS SE) Lonny Lundsten Todd Ruston (Storage)	Danelle Cline Duane Edgington Brian Schlining Nancy Jacobsen Stout Lonny Lundsten Research representation	Mark Chaffey (design) Lonny Lundsten (M3RS integration) Dave French (ROV integration) Steve Haddock (Sci. impact)
Stakeholders (additional or future team membrs, labs, projects)	All of MBARI		Kyra Schlining Susan von Thun Linda Kuhnz Megan Basset	Ben Yair Raanan John Ryan Steve Rock Lab Bioinspiration Lab Acoustics Lab	Bryan Schaeffer (Ricketts) DJ Osborne (Ventana) Dale Graves (MiniROV) Todd Walsh (maint, calib)
Progress to date	Adisory on video and machine learning projects Investigation of current machine learning technologies Collaborations with external peers on projects specific to deep-sea domain		30-year's of video assets, annotations, and publications VARS and DSG M3 and M3RS (modern file-based system	Deep-learning methods successfully applied to still images Significant experience developing effective training datasets (stills and video) Shifted focus to machine learning technologies for video	COTS camera testing (75%) ROV integration readiness Doc Ricketts (%) Ventana (%) MiniROV (%)
Future high-level goals	Develop and maintain overall strategic vision		VARS software modifications/maintenace Core annotation/backlog (humans + AI)	Integrated machine learing into everyday annotation workflow MBARI Model Zoo (published models and procedures) MBARI VideoNet (currated, hierarchical)	Specify camera upgrades that improve resolution for science Ensure camera technology does not become obsolete
Challenges and identified solutions	Lack of institute strategy and priority for video and machine learning projects Increasing data streams and resource time to manage them		Diversify the pool of software engineers for developing tools to aid processing and analysis	Secure funds for: Engaging active external collaboration Cloud-based, serverless ML evaluations/solutions internal computational capabilities	Incompatabilities among platforms Wide array of COTS cameras to evaluate, many low resolution