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SAN FRANCISCO BAR PILOTS
NAVIGATION TECHNOLOGY PLAN - 2020 - COST ESTIMATES

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PART 1 - PRECISION DOCKING SYSTEM FOR ULCV PILOTING

A. Piloting Components - 6 complete units total

Sensor Hardware - Trelleborg Marine Systems DK, model SafePilot CATII with AIS (1 Sensor per system)
Display Hardware - Apple iPad Pro 12.9 inch 128 GB WiFi + LTE   (2 Displays per system)
Navigation Software - SEAiq Pilot (1 license per display)
Carrying case - Watershed Zip Dry Chattooga waterproof bag with strap

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1 Each - Precision Docking System   (Hardware)

1 CATII with AIS	*Existing hardware in service*	$0
	Subtotal	**$0**
2 Apple iPad Display (2 displays required per Docking System)		$0
	Existing hardware in service	
	Subtotal	**$0**
1 Carrying Case	*Existing hardware in service*	**$0**
Total Hardware Purchase and Service Contract/Warranty/Support Cost per system		**$0**

Precision Docking System Software Package (ANNUAL LICENSE SUBSCRIPTION) per display

1 SEAiq Pilot Enterprise Subscription	$360
1 SEAiq Pilot Enterprise Subscription	$360
Annual License Subscription Fee per E-Pilot System	$720

Piloting Components Totals	Hardware	Software
Hardware Cost Per Unit	$0	
Total # of systems required - 6	x6	
Total Hardware Cost	$0	
Annual Client Software License Fee per E-Pilot system		$720
Total # of E-Pilot Systems - 6		x 6
Total Annual Client Software License Fees		$4,320
Planned Years of Service - 3		x 3
Total 3 year Client Software License Fees		$12,960
Annual LTE data fees for SEAiq Enterprise Server (@ $20/mo)		$240
Total # of E-Pilot Displays - 12		x 12
Total Annual Data Fees		$2,880
Planned Years of Data Service - 1		x 1
Total Data Fees		$2,880

Precision Docking System Total 3 Year Cost Estimate	**$0**	**+**	**$15,840**	**=**	**$15,840**

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PART 2. ENHANCED ROUTE PILOTING SYSTEM

A. Piloting Components - 62 complete units total

Sensor Hardware - Trelleborg Marine Systems DK - CAT XT System (2 XT Devices per Pilot System)
Display Hardware - Apple iPad Pro 12.9 inch 128 GB WiFi + LTE
Navigation Software - SEAiq Pilot Enterprise Subscription

1 each - CAT XT System with IP 67 water tightness upgrade (2 XT devices per pilot)		$0
Existing hardware in service	**Subtotal**	**$0**

1 each - Apple iPad Pro 12.9 inch 128 GB WiFi + LTE		$1,069
Apple Care 2 year extended warranty		$110
	Subtotal	**$1,179**

Total Hardware Purchase, Warranty and Support Cost (Per Pilot)	**$1,179**

SEAiq Pilot Enterprise (Annual License Subscription Fee Per Pilot)	**$360**

Piloting Components Totals

	Hardware	Software
Hardware Cost Per Unit	$1,179	
Total # of units Required - 62	x62	
Total Hardware Cost	$73,098	
Annual PPU Software License Fee		$360
Total # of Licenses Required - 62		x 62
Total Annual PPU Software License Fees		$22,320
Planned Years of Service - 3		x 3
Total 3 year PPU Software License Fees		$66,960
Annual LTE data fees for SEAiq Enterprise Server (@ $20/mo)		$240
Total # of Route Piloting Systems		x 62
Total Annual Data Fees		$14,880
Planned Years of Data Service - 1		x 1
Total Data Fees		$14,880
Sales Tax on Hardware 8.5%	$6,213	

Enhanced Route Piloting System Total 3 Year Cost Estimate   **$79,311**   **+**   **$81,840**   **=**   **$161,151**

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NAVIGATION TECHNOLOGY PLAN - 2020 - COST ESTIMATES

3 Year Cost Totals

PART 1 - PRECISION DOCKING SYSTEM FOR ULCV PILOTING

Precision Docking System Hardware and Software Total 3 Year Cost Estimate $15,840

PART 2 - ENHANCED ROUTE PILOTING SYSTEM

Enhanced Route Piloting Hardware and Software Total 3 Year Cost Estimate $161,151

Total SFBP NavTech Plan Estimated 3 Year Cost $176,991