

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

**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

**BOPC RECEIVED**  
**7/15/2020**

1 Each - Precision Docking System (Hardware)		
1 CATII with AIS	<i>Existing hardware in service</i>	\$0
	<b>Subtotal</b>	<b>\$0</b>
2 Apple iPad Display (2 displays required per Docking System)		\$0
	<i>Existing hardware in service</i>	
	<b>Subtotal</b>	<b>\$0</b>
1 Carrying Case	<i>Existing hardware in service</i>	\$0
<b>Total Hardware Purchase and Service Contract/Warranty/Support Cost per system</b>		<b>\$0</b>

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

	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 - 3		x 3
Total Data Fees		\$8,640

**Precision Docking System Total 3 Year Cost Estimate**      \$0      +      \$21,600      =      **\$21,600**

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

**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 - 3		x 3
Total Data Fees		\$44,640
Sales Tax on Hardware 8.5%	\$6,213	
<b>Enhanced Route Piloting System Total 3 Year Cost Estimate</b>	<b>\$79,311</b>	<b>\$111,600</b>
	+	=
		<b>\$190,911</b>

<b>SAN FRANCISCO BAR PILOTS NAVIGATION TECHNOLOGY PLAN - 2020 - COST ESTIMATES</b>
--

**3 Year Cost Totals**

**PART 1 - PRECISION DOCKING SYSTEM FOR ULCV PILOTING**

Precision Docking System Hardware and Software Total 3 Year Cost Estimate	<b>\$21,600</b>
---	-----------------

**PART 2 - ENHANCED ROUTE PILOTING SYSTEM**

Enhanced Route Piloting Hardware and Software Total 3 Year Cost Estimate	<b>\$190,911</b>
--	------------------

<b>Total SFBP NavTech Plan Estimated 3 Year Cost</b>	<b>\$212,511</b>
--	------------------