Presentation to Canadian Patriots
Gabriola Island, BC
Canadian Patrol Submarine Project
Korean KSS-III
VS
German/Norwegian Type 212CD

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Agenda (Purpose)

- Provide objective comparison of the two shortlisted options for the Canadian Patrol Submarines Project (CPSP) (up to 12 boats)

- RCN needs & CPSP overview
- KSS-III Specifications
- Type 212CD Specifications
- Head-to-head comparison
- Pros/cons & my recommendation

But First a Word for Our Sponsor:

You

The Canadian Taxpayer

Why Have a Navy: RCN Strategic Needs

1. Protect and assert Canada’s sovereignty
2. Secure national waters and trade routes, including the Arctic
3. Support continental defense through NORAD and NATO interoperability
4. Project soft power
5. Maintain situational awareness and deterrence

Assets RCN Needs to Fulfill Mission

1. Blue Water Destroyers and Frigates
2. Arctic Patrol Vessels
3. Support Ships ('Oilers')
4. Corvettes (Mainly Coastal waters)
5. Submarines
6. Support Vessels
   (Tugs, Dive Tenders, Picket Craft, Aircraft coastal patrol vessels, Coast Guard, etc.)
7. Shore Facilities and Training Vessels

River Class Destroyers (Under Construction)

- Displacement: 8,080 tons
  (Based on British Type 26 6,900 tons)
- Armament:
  - 127 mm main gun
  - 32-cell Mk 41 VLS for long-range SAMs
  - Torpedoes
- Advanced ASW suite with towed array sonar;
- Hangar for two helicopters (Cyclone-class)
- Stealth shaping and advanced electronic warfare systems
- Role: Blue-water combat, Arctic protection,
  and joint NATO operations

Artist Renderings of River Class Destroyer

Arctic and Offshore Patrol Ships (AOPS)

- **Displacement:** 6,615 tonnes **Length:** 103.6 m
- **Max Speed** (open water): 17 knots
- **Range:** 6,800 NM **Endurance**: 120 Days
- **Ice Class: Polar Class 5** (first year ice up to 1 m thick)
- **Crew:** ~65 core crew, accommodations for up to 85+
- **ARMAMENT:**
  - 1 × BAE Mk 38 25 mm main gun
  - 2 × M2 Browning .50 calibre machine guns
  - Small arms suite for boarding operations
- **Aviation:**
  - Cyclone Helicopter
  - Gargoyle Unmanned Aircraft for Surveillance

Picture of HMCS Harry DeWolf

Why New CDN Patrol Submarines Project

1. Victoria-class challenges: Aging, limited availability (often 1-2 operational), no true under-ice capability.
2. CPSP goals: 12 AIP diesel-electric subs by mid-2030s; focus on Arctic sovereignty, Atlantic/Pacific patrols, NATO contributions, deterrence. (4 per ocean)
3. Key requirements: Under-ice/Arctic ops, extended submerged endurance, low acoustic signature, multi-role (anti-sub/surface, ISR), industrial benefits (Canadian jobs/content).

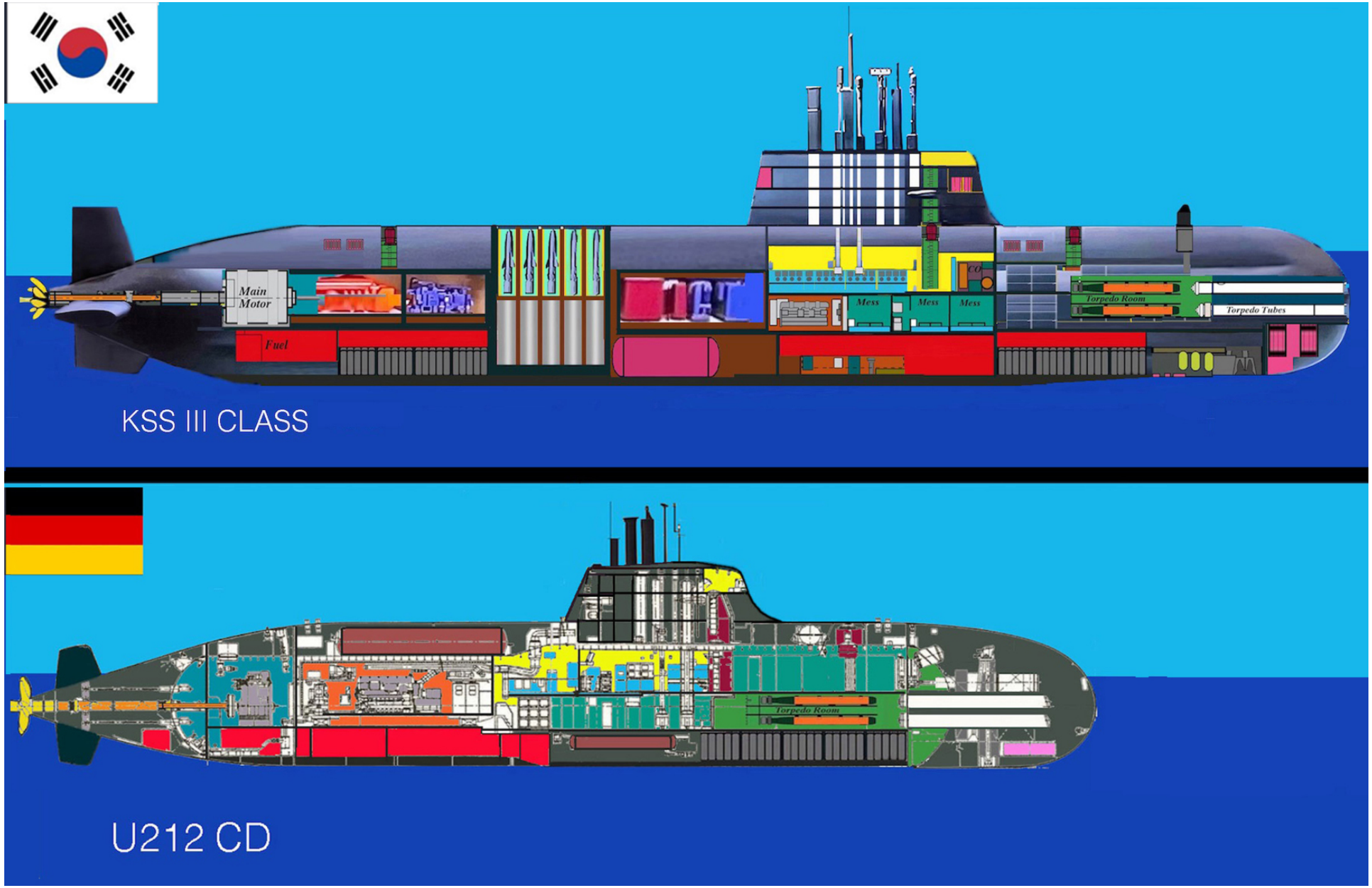
The Canadian Patrol Submarine Project (CPSP)

Up to 12 boats, contract will be let by year-end

Shortlisted:

1. Hanwha Ocean (South Korea) KSS-III Batch-II
2. **TKMS (Germany/Norway) Type 212CD**

- Bids emphasize Arctic suitability, jobs, rapid delivery
- Decision factors:
  - ✓ Operational fit
  - ✓ cost (~$20B+)
  - ✓ economic offsets
  - ✓ timelines (prefer first boat by 2032)


Main Motor
Fuel
Mess
Mess
Mess
CO
Torpedo Room
Torpedo Tubes
KSS III CLASS
Torpedo Room
U212 CD

Contender 1: KSS-III
(Dosan Ahn Changho Class, Batch-II)

- South Korea's indigenous design (in service)
- Key specs:
  - Displacement:
    ~3,700 t surfaced / ~4,180 t submerged (~ 480 t buoyancy)
  - Length:
    ~89 m (~292 feet)
  - Propulsion: Diesel-electric + PEM (Hydrogen) fuel cell AIP + lithium-ion batteries (extended quiet time)
  - Crew: ~50 (high automation) 3 watches
  - Endurance: High range/endurance for blue-water patrols
    ~10,000 Nautical Miles (Victoria to Hawaii and back, twice)

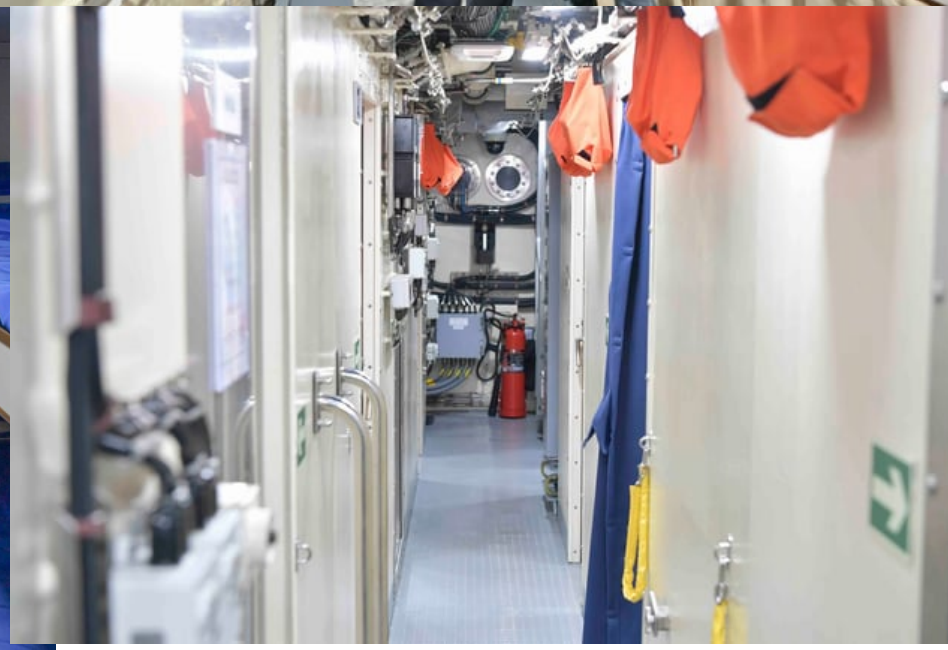
Contender 1: KSS-III (Continued)

- Armament:
  6 × 533mm torpedo tubes +
  10 × Vertical Launching System (VLS)
  (cruise missiles, land-attack potential)

- Strengths:
  Larger size for habitability
  VLS for strike

Pictures of Korean KSS-III (Un-Classified)

Pictures of Korean KSS-III (Un-Classified)



KSS-III (Dosan Ahn Changho) Class Submarine

First Operational AIP-Equipped Submarine With A Vertical Launch System (VLS)

Size Comparison

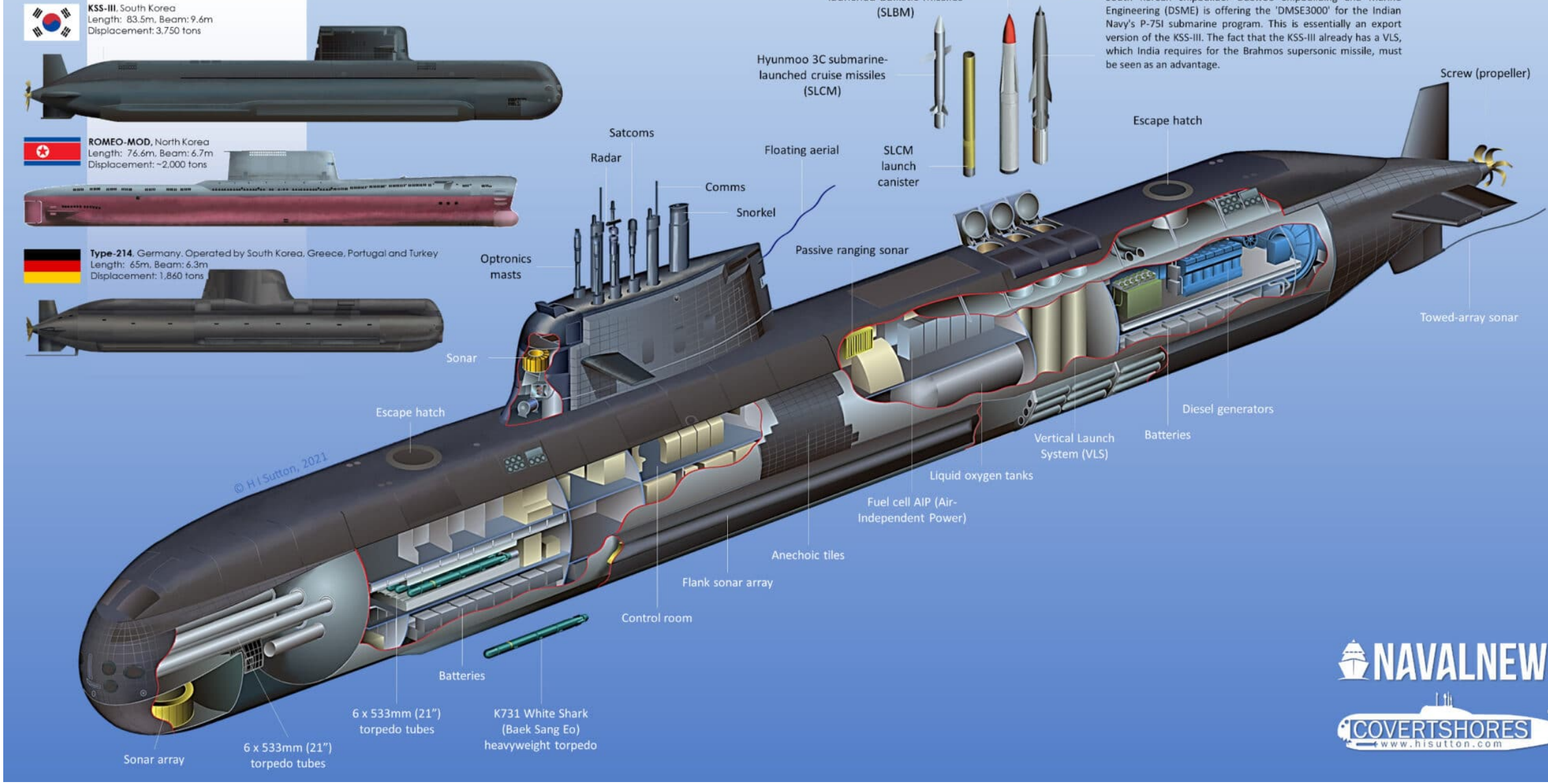
KSS-III, South Korea
Length: 83.5m, Beam: 9.6m
Displacement: 3,750 tons

ROMEO-MOD, North Korea
Length: 76.6m, Beam: 6.7m
Displacement: ~2,000 tons

Type-214, Germany. Operated by South Korea, Greece, Portugal and Turkey
Length: 65m, Beam: 6.3m
Displacement: 1,860 tons

Brahmos – Indian Navy Systems

South Korean shipbuilder Daewoo Shipbuilding and Marine Engineering (DSME) is offering the 'DMSE3000' for the Indian Navy's P-75I submarine program. This is essentially an export version of the KSS-III. The fact that the KSS-III already has a VLS, which India requires for the Brahmos supersonic missile, must be seen as an advantage.



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Contender 2: Type 212CD (TKMS, Germany/Norway Common Design)

- Evolution of proven Type 212A (Type 212A in service Germany/Italy, Type 212CD not in service yet))
- Key specs:
  - Displacement:
    ~2,500 t surfaced / ~2,800 t submerged (~ 300 t buoyancy)
  - Length:
    ~73 m (~240 feet)
  - Propulsion: Diesel-electric + PEM (Hydrogen) fuel cell AIP + lithium-ion batteries (extended quiet time)
  - Crew: ~27-30 (2-Watch System) with some room for “riders”
  - Endurance: Up to 41 Days, Estimated 7,000NM @ 8Knots

Type-212CD Submarine
Compared To Original Type-212A

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~56 meters (183 ft)

~6.8 meters (180 ft)

Type-212A
1,524 t
surfaced

~11 meters (36 ft)

Type-212CD
~2,500 t
surfaced

~13 meters (43 ft)

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~73 meters (240 ft)

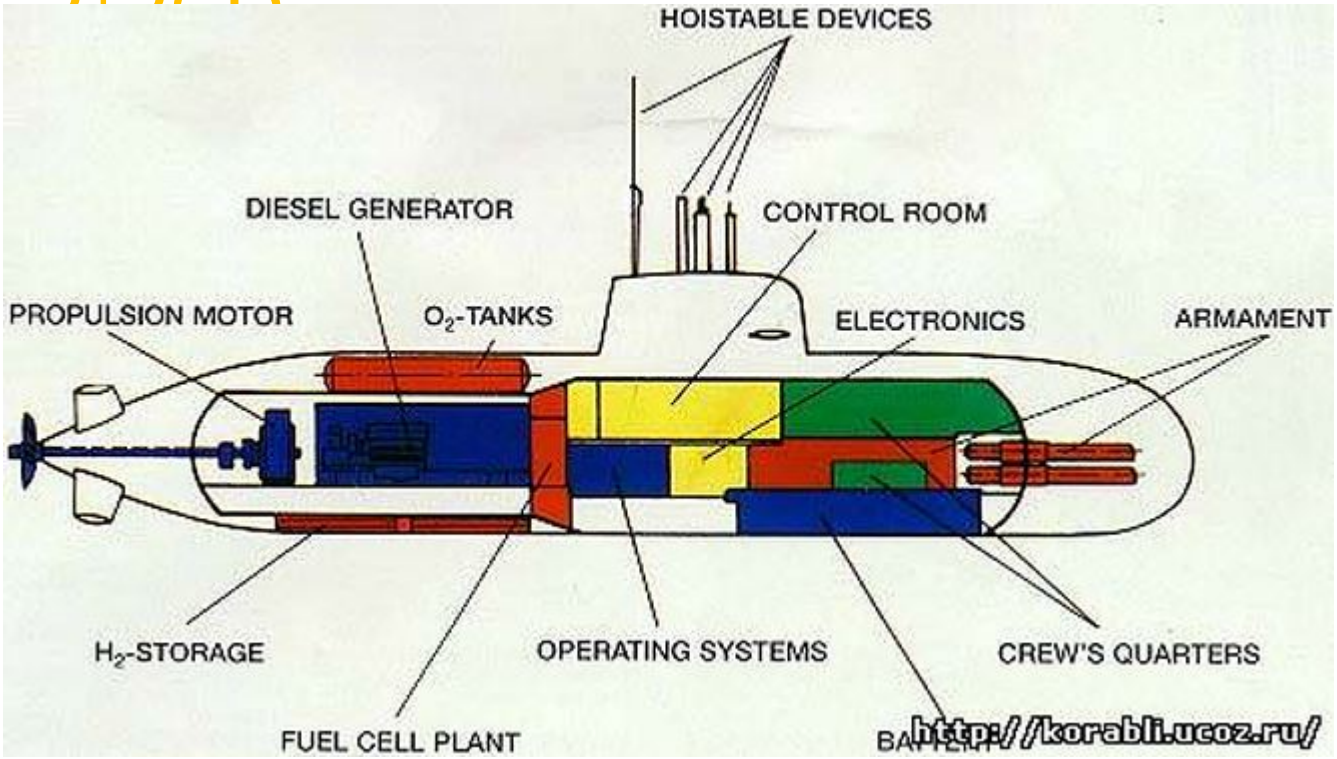
~10 meters (32 ft)

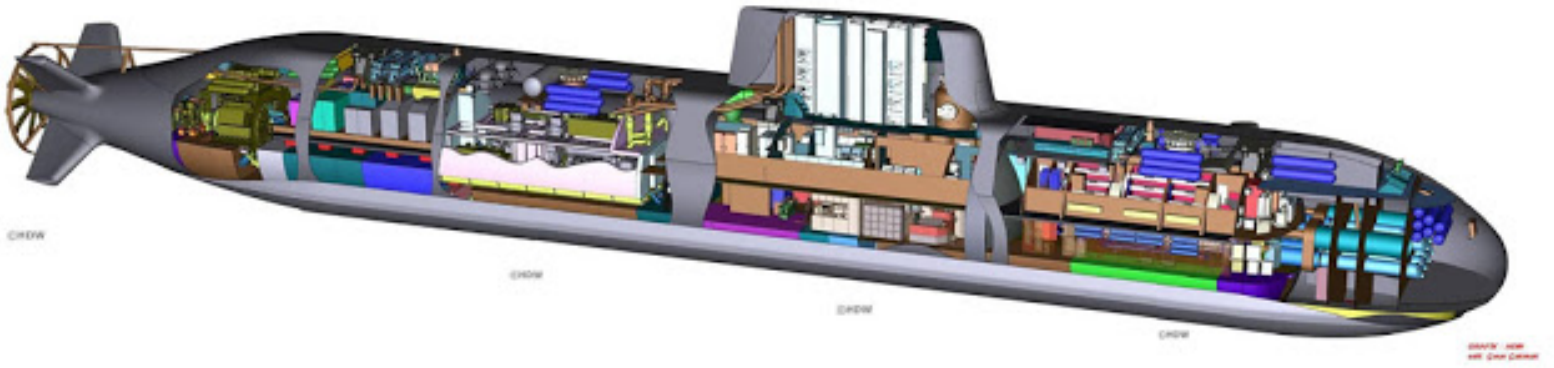
Contender 2: Type 212CD (Continued)

- Armament:
  4 × torpedo tubes with up to 14 weapons torpedoes/missiles/drones
  Potential Integrated Air Defense Systems (IDAS)

- Strengths:
  Superior stealth (on Paper)

Artist Renditions of German/ Norwegian 212CD





Analysis of the CPSP

1. **Size and Endurance**: KSS-III is larger and designed for extended blue-water operation with a higher crew complement and missile payload, whereas Type 212CD is more compact, optimized for stealth and Arctic patrol.
2. **Propulsion**: Both use diesel-electric with AIP, both integrate fuel cells with lithium-ion batteries for extended endurance, stealth, and faster charge cycles.

Armament and Strike Capability: KSSIII uniquely offers vertical launch of submarine-launched ballistic missiles and land-attack cruise missiles, extending strategic reach.
Type 212CD focuses on conventional torpedoes and cruise missiles (Tube launch capable).

Analysis of the CPSP (Continued)

4. **Operational Focus**: KSS-III emphasizes countering North Korea in local waters, regional blue-water reach and strike power for Indo-Pacific operations, while Type 212CD is suited for Northern/Arctic covert operations with NATO forces.

5. **Export and Industrial Cooperation**: Both systems include potential collaborations.

   South Korea claims rapid domestic production and strategic missile capabilities; Hanwha is a large multi-profile business conglomerate that can deliver on its promises to expand in Canada.

   Germany emphasizes Arctic interoperability and stealth.

Conclusion

1. South Korea's KSS-III is larger and strategically versatile with vertical launch ballistic missile capability suited for global power projection in both littoral (near North Korea) and open oceans

2. Germany's Type 212CD prioritizes stealth, Arctic proficiency, and intelligence/anti-submarine missions under extreme conditions

CPSP Comparison of Key Components

Feature	South Korea: KSS-III Batch II	Germany: Type 212CD
Displacement	3,600 Tonnes surfaced **4,180 Tonnes submerged**	2,500 Tonnes surfaced 2,800 Tonnes submerged
Crew	50 (3 Watch Crew)	**Likely 27–30** (2 Watch Crew)
Range	**~10,000 NM**	Estimated at 7,000 NM
Vertical Launch System	**Yes; 10 cells**	No
Canada Content	Yes, including other industry offsets	Yes
In Service	**Yes**	No
Stealth	Excellent, but larger sonar signature	**Claim, "The quietest submarine on Earth" (on Paper)**
Cost and Delivery	Cost TBD, but other considerations, Delivery 2032 then 1 per year	Cost TBD, but other considerations, First delivery likely 2034, none delivered yet

My Personal (only) Preference - KSSIII

1. **Bigger Size:** means more fuel, range, stores, crew comfort, Vertical Launch Missiles, more buoyancy to break through ice, ocean going (especially important in Pacific and Arctic Oceans (submarines typically don't fight under ice but transit under ice to guard the entrances and exits from the ice)

2. **First boat** 2032 vs 2035 and faster delivery of remainder of boats

3. **Cost less** per boat (estimated) and, secondary, may offer more Canadian content

4. **Neither boat** fires the NATO 'Standard' Mark 48 torpedo, so a wash and both torpedo and fire-control systems are excellent choices

In the End, It will be a Political Decision

Those who are given authority, quickly think they are the **Authority**

In the end, I want the best solution to **Protect Canada**,
not the better solution to reward friends, and garner votes in favoured ridings.

A Home Economics Lesson for our Government

Food is an **Expense**, not an **Investment**

Home Insurance is an **Expense**, not an **Investment**

Military Spending is an **Expense**, not an **Investment**

The End

(Q&A to Follow)