

OPNAVINST 9420.2  
N763  
15 Feb 2001

**OPNAV INSTRUCTION 9420.2**

From: Chief of Naval Operations

Subj: IMPLEMENTATION OF THE ELECTRONIC CHART DISPLAY AND  
INFORMATION SYSTEM-NAVY (ECDIS-N) CERTIFICATION PROCESS

Ref: (a) CNO Ser N00/8U5000076 of 17 Mar 98 (NOTAL)  
(b) DoD Instruction 5000.2 dtd 23 Oct 2000, Operation of  
the Defense Acquisition System, (NOTAL)  
(c) Chairman of the Joint Chiefs of Staff Instruction  
(CJCSI) 3170.01A, Requirements Generation System (NO-  
TAL)  
(d) Secretary of the Navy Instruction 5000.2B Implementa-  
tion of Mandatory Procedures for Major and Non-Major  
Defense Acquisition Programs and Major and Non-Major  
Information Technology Acquisition Programs  
(e) NAVSEAINST 9420.3 dtd 02 July 98, Certification of  
Navigation Systems (NOTAL)  
(f) OPNAVINST 1500.76, Navy Training System Requirements,  
Acquisition, and Management (NOTAL)

Encl: (1) Requirements and Test Methods for Electronic Chart  
Display and Information Systems-Navy (ECDIS-N)  
(2) Grandfather Conditions Applying to COTS ECDIS-N Can-  
didates

1. **Purpose**

a. To implement the U.S. Navy electronic chart display and  
information system policy, as it relates to certification  
process, promulgated in reference (a).

b. To aid the transition of primary support for navigation  
and piloting on U.S. Navy vessels from paper charts to an  
electronic charting environment.

c. To assign responsibilities to specific Navy organizations  
related to the implementation of the ECDIS-N certification  
process.

2. **Applicability.** The provisions of this instruction shall  
apply to the staff of the Chief of Naval Operations (CNO), Fleet  
Commanders in Chief, Type Commanders, Commander Operational Test  
and Evaluation Force (COMOPTEVFOR) and commanders of the various

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systems commands. Any system currently installed or scheduled for installation on a commissioned U. S. Navy vessel for the purpose of navigation, piloting and accurate positioning in lieu of the requirement to maintain paper navigation charts shall complete the ECDIS-N certification process described in this instruction. Prior to ECDIS-N certification, a system shall only be used to enhance situational awareness in support of safe navigation.

3. **Background.** With the advancements in electronic databases, operating systems, and computer technology the potential exists to employ electronic charts at sea on a widespread basis. Coupled with continuous and automated positioning systems, such as the Global Positioning System (GPS) and Inertial Navigation System (INS), it is possible to take maximum advantage of electronic charting, eliminating many constraining aspects of navigation using paper charts while significantly advancing safety of navigation. Enclosure (1) to the CNO ECDIS-N policy letter (reference (a)) provides guidance and the minimum systems performance standards for ECDIS-N. The CNO policy letter assigned various responsibilities key to the Navy's transition from navigation and piloting by paper to an electronic charting environment, but did not specifically articulate or implement an ECDIS-N certification process. ECDIS-N certification is a prerequisite to removing paper charts from Navy vessels.

4. **Action**

a. A resource sponsor and/or program manager responsible for a program with ECDIS-N certification as a requirement, shall incorporate the performance and testing requirements listed in enclosure (1) into the applicable acquisition documentation required by references (b) through (d) (e.g., Operational Requirements Document (ORD), Acquisition Program Baseline (APB), Test and Evaluation Master Plan (TEMP)). These performance requirements will form the basis for development of operational testing milestones used to evaluate the candidate ECDIS-N to achieve certification.

(1) Land-based testing conducted on a candidate ECDIS-N shall utilize a common test data set developed by the National Imagery and Mapping Agency (NIMA) in accordance with appendix 7 to enclosure (1). Use of this common test data is required to verify that the ECDIS-N properly reads approved vector product format (VPF) electronic charts (i.e., Digital Nautical Charts (DNC<sup>?</sup>), Tactical Ocean Data (TOD) and Littoral Warfare Data (LWD)) and displays them using the Geospatial Symbols for Digital Displays (GeoSym<sup>?</sup>).

(2) Upon completion by NIMA, the VPF Database Update (VDU) process shall be utilized by candidate ECDIS-N systems to accurately update and maintain approved VPF electronic charts.

(3) In accordance with reference (a), candidate ECDIS-N systems shall be Defense Information Infrastructure Common Operating Environment (DII COE) level-5 compliant as specified in enclosure (1). This requirement is relaxed for COTS ECDIS-N candidates until 1 Oct 2005, as specified in enclosure (2).

b. Program managers shall ensure their program and candidate ECDIS-N complete program milestones and required acquisition procedures.

c. COMOPTEVFOR shall make:

(1) an evaluation of the effectiveness and suitability of the ECDIS-N candidate, and

(2) recommendations to the Chief of Naval Operations regarding fleet release of the system based upon the results of operational testing.

d. Upon review of COMOPTEVFOR recommendations, CNO(N7) may approve the candidate system as meeting the ECDIS-N performance standards and authorize fleet introduction and continued installation on naval vessels.

e. A certified ECDIS-N shall provide a capability that is integrated with the Navy-approved navigation suite on board the vessel. The approved navigation suite includes installed continuous and automated positioning system(s), any ancillary equipment supporting navigation and interfaces with other systems and equipment required to support mission requirements.

f. The Commander, Naval Sea Systems Command (COMNAVSEASYS COM) shall revise the current Certification of Navigation Systems Program (NAVCERT) (reference (e)) and provide a Navy-wide method to test uniformly the integrated navigation suite of a Navy vessel. Programmatic responsibility for the various systems which make-up the navigation suite of today's naval vessels cross a number of resource sponsors, program offices and system commands. Therefore, the Commander, Naval Air Systems Command (COMNAVAIRSYS COM), the Commander, Space and Naval Warfare Systems Command (COMSPAWARSYS COM) and appropriate program managers shall actively participate with COMNAVSEASYS COM in this NAVCERT revision process.

(1) The revised NAVCERT Program shall incorporate all performance requirements from and follow the test methods of enclosure (1). Since the requirements reference some procedures

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and databases that are in development, the following exception is effective until the stated exit criteria is met. The requirement for VDU update is waived. This waiver shall be terminated when NIMA issues an updated VDU process.

(2) When conducting a NAVCERT, the test plan may be tailored to a specific vessel, taking into account results from previous system tests (e.g. developmental or operational testing).

(3) Certification and testing based on the revised NAVCERT Program shall be conducted following initial installation and/or any baseline change to the vessel's navigation suite and following a repair/refurbishment that affects the accuracy of the navigation suite. Changes to a certified ECDIS-N shall be submitted to COMNAVSEASYSKOM who will assess the configuration and baseline changes. COMNAVSEASYSKOM shall provide recommendations to the FLTCINCs as to the need for another NAVCERT, and shall coordinate with all organizations involved with a system retest.

g. In addition to installation-unique requirements, COMNAVSEASYSKOM will insure as part of the certification process that any approved ECDIS-N installation will have full redundancy including uninterruptible power sources.

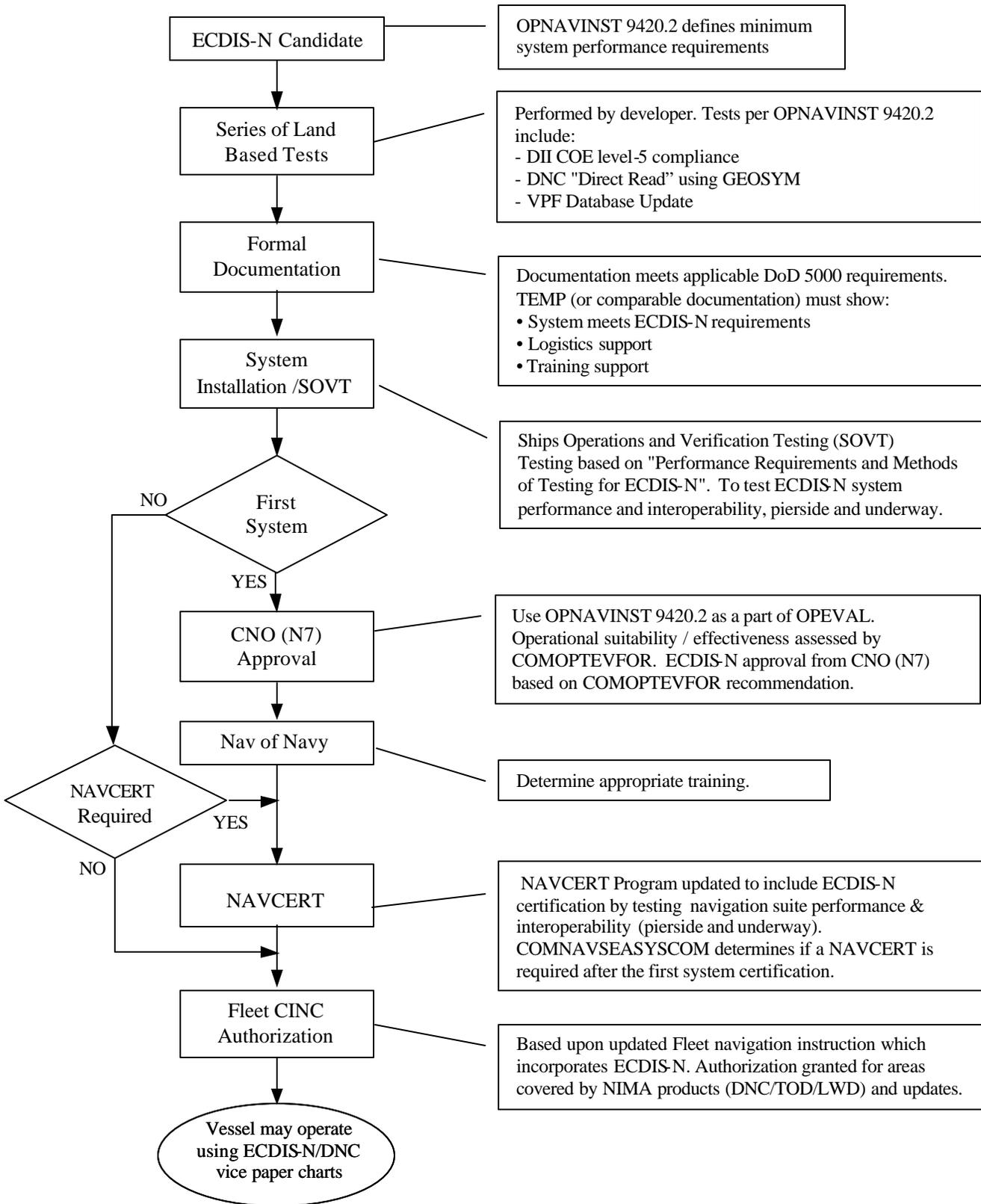
h. Fleet Commanders in Chief (FLTCINC) may authorize the use of the candidate ECDIS-N in lieu of paper charts on a Navy vessel. FLTCINC authorization shall be based upon:

(1) completion of the revised NAVCERT conducted on the vessel's navigation suite, and

(2) completion of a fleet review process that verifies the ECDIS-N and the personnel operating the system can safely navigate the vessel in accordance with the appropriate navigation instructions.

i. A flow diagram is provided in Figure-1 to illustrate the ECDIS-N certification process.

j. An electronic charting system installed on a Navy vessel prior to approval of this instruction, or acquired outside the acquisition process described in reference (b) through (d), can achieve ECDIS-N certification. A sponsoring organization (normally the appropriate type commander) can nominate a system in this category to CNO(N7) for ECDIS-N certification via the fleet commander and appropriate platform resource sponsor. The nomination package shall include the following:



**Figure 1 - ECDIS-N Certification Process**

(1) documentation that shows the electronic charting system as installed on the specific vessel meets<sup>1</sup> the performance requirements specified in enclosure (1), and

(2) a plan to provide appropriate logistic support for the electronic charting system, and

(3) a plan to establish a personnel (officer and enlisted) training program for the electronic charting system as specified in reference (f), and

(4) a funding line sufficient to cover OPEVAL and NAVCERT testing.

After review of the nomination package and COMOPTEVFOR's operational evaluation final report, CNO(N7) may approve the candidate electronic charting system as meeting the performance standards issued in the Navy ECDIS policy. FLTCINCs shall then execute their responsibilities in accordance with this instruction. A flow diagram is provided in Figure-2 to illustrate the ECDIS-N certification process for these non-"Program of Record" systems.

k. The performance requirements defined in enclosure (1) section 3 constitute the minimum criteria for ECDIS-N certification. Compliance with these minimum criteria is established by testing that is in accordance with enclosure (1) section 4. Testing will include an at-sea evaluation of the system in its intended operational environment while being maintained by fleet personnel.

5. **Responsibilities.** Specific commands and agencies shall execute their duties as described in reference (a) and as amplified below:

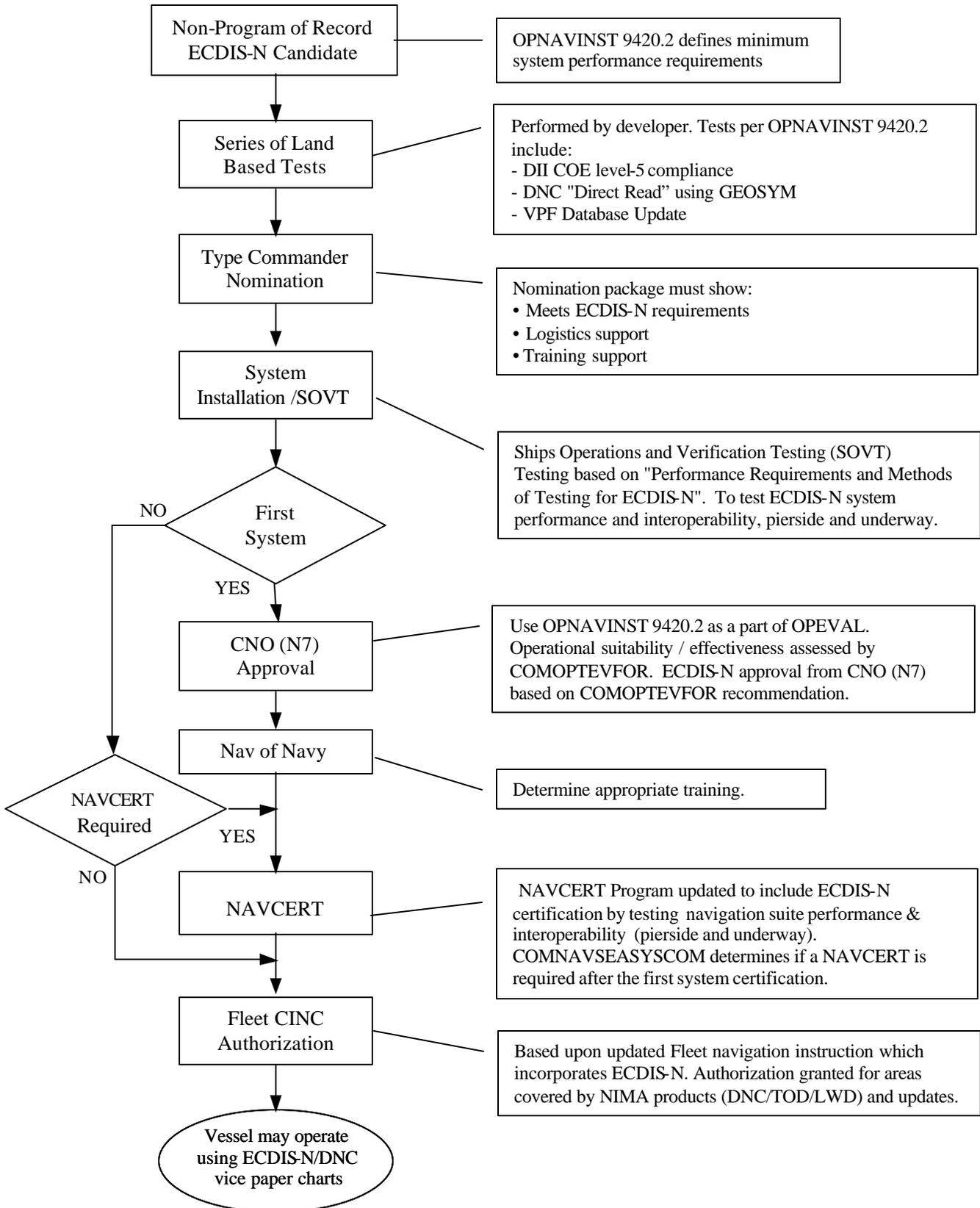
a. The Deputy Chief of Naval Operations (DCNO) for Warfare Requirements & Programs (N7) shall:

(1) evaluate and act upon any type commander nomination seeking ECDIS-N certification of an installed electronic charting system,

(2) convene an Operational Test Readiness Review in order to certify a candidate system is ready for operational testing and to ensure adequate funding is in place to conduct proposed testing, and

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<sup>1</sup>Note: The results of testing using enclosure (1), conducted in accordance with the revised NAVCERT program are sufficient to meet this requirement.



**Figure 2 - ECDIS-N Certification Process, Non-“Program-of-Record”**

(3) notify FLTCINCs regarding ECDIS-N certification of an electronic charting system.

b. The Deputy Chief of Naval Operations for Manpower and Personnel (N1) shall be responsible for officer, enlisted and civilian manpower/qualification requirements review and validation prior to each acquisition milestone in accordance with reference (f).

c. The Oceanographer of the Navy (N096) shall:

(1) maintain and update enclosure (1) and issue as required, and

(2) coordinate with NIMA the development and issuance of a test data set, based on standard NIMA chart products and formats, for use in system testing.

d. The Navigator of the Navy shall, in cooperation with the DCNO for Warfare Requirements & Programs (N7), determine the training appropriate for ECDIS-N.

e. COMOPTEVFOR shall make an evaluation of the operational effectiveness and suitability of candidate systems and a specific recommendation regarding ECDIS-N certification and subsequent fleet release to CNO(N7) based on the results of operational testing.

f. COMNAVSEASYSYSCOM shall revise and update the NAVCERT Program (reference (e)) to include ECDIS-N certification criteria as described in enclosure (1). COMNAVAIRSYSYSCOM, COMSPAWARYSYSCOM and appropriate program managers shall actively participate in this process. COMNAVSEASYSYSCOM shall assess the configuration and baseline changes required for an upgrade to an ECDIS-N certified system, and shall provide recommendations to the FLTCINCs as to the need for another NAVCERT. COMNAVSEASYSYSCOM shall coordinate with all organizations involved with a system retest.



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