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OFFICE OF NAVAL INTELLIGENCE
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IN REPLY REFER TO
5720
Ser ONI-22/0008

JAN 22 2015

Mr. John Greenewald, Jr.

[REDACTED]
[REDACTED]

Department of Navy (DON) FOIA# DON-NAVY-2015-002053

Dear Mr. Greenewald:

This responds to your November 26, 2014 Freedom of Information Act (FOIA) request emailed to the Defense Technical Information Center (DTIC) for a copy of DTIC publication "Digital Ocean: PRC Open Source Discussion of Special Project 908 (U)." On December 19, 2014, the Office of Naval Intelligence (ONI) received your request with the requested document from DTIC for ONI's review and release determination. The above referenced DON FOIA number was assigned to your request.


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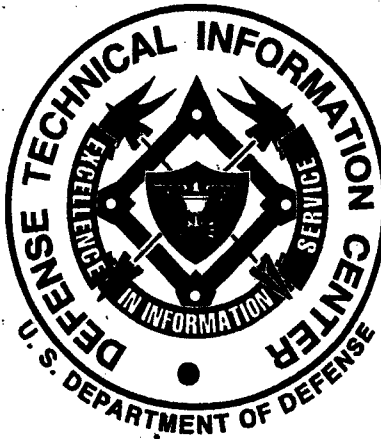

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Digital Ocean: PRC Open Source Discussion of Special Project 908 (U)

David Liebenberg, Lisa Hannett, Catherine Welch

CNA CHINA  STUDIES

~~Not releasable to Foreign Nationals~~

DQR-2013-C-005545-Final
September 2013

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CNA
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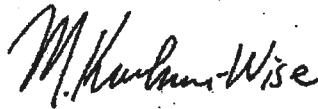
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Approved for distribution:



September 2013

Maryanne Kivlehan-Wise
Director
China Strategic Issues Group
CNA China Studies

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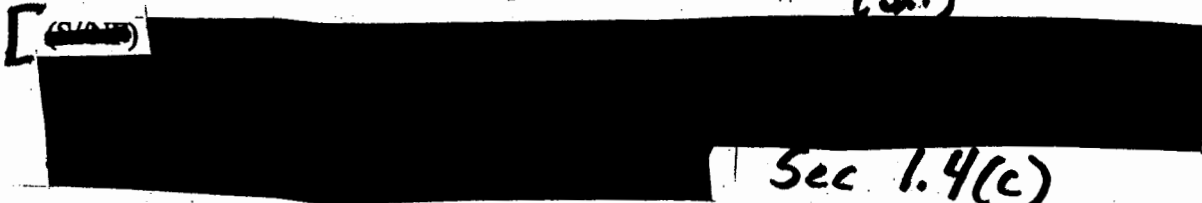
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(U) Executive summary

(U) In 2003, the People's Republic of China's (PRC's) State Council initiated a major national project to collect and disseminate data about China's littoral region known as *The Comprehensive Survey and Evaluation of China's Coastal Waters Project*, or "Special Project 908."

(U) The goals of this project were to:

- Construct a framework for collecting, organizing, and disseminating standardized maritime data across all of the various PRC institutions and organizations operating in China's maritime domain. This framework was named the *China Digital Ocean Information Framework*, or "Digital Ocean."
- Conduct a comprehensive survey and evaluation of China's coastal waters, with an eye towards the creation of new maps of China's coastline. (b)(1)



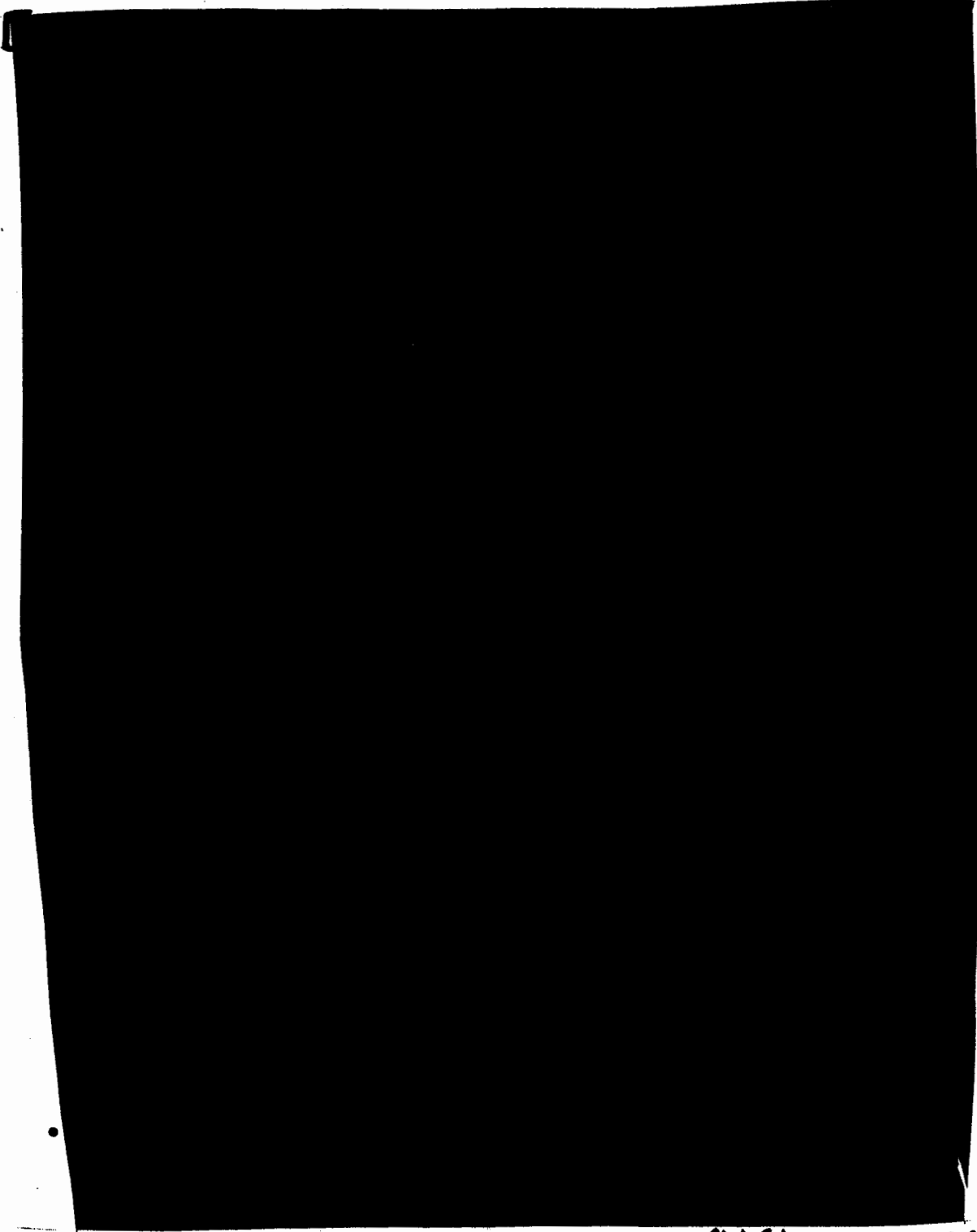
(U) The project appears to be high-profile, well-resourced, and ambitious in scope.

(U) In 2003, the State Council designated Special Project 908 as a "major national project" designed to support the PRC's *Outline on the National Maritime Economic Development Plan*.

(U) According to Xinhua, Special Project 908 is one of the most expensive projects in PRC history. PRC reporting on the project frequently makes reference to outsourcing, and describes the amount of funding spent to conduct quality control and manage project bidding processes.

(U) An often cited accomplishment associated with this project is the creation of high-precision maps of the seabed and landforms of China's coastal waters. In creating these maps, special attention was paid to assessing the potential for developing offshore renewable energy sources and identifying maritime disaster risks.

(U) Special Project 908 and its subordinate effort, Digital Ocean, have a large bureaucratic footprint.



(b)(1) Sec. 1.4(c)



(S//NF) Sec 1.4(c)

(U) Additional data on Special Project 908 and Digital Ocean are currently available and are unexamined. Sources of such data include:

- Journals sponsored by Chinese government organizations
- Academic journals
- Online articles posted in newspapers, on government websites, and from conference proceedings.

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(U) Introduction

(U) In 2003, the People's Republic of China's (PRC's) State Council initiated a major national project to collect and disseminate data about its littoral region known as *The Comprehensive Survey and Evaluation of China's Coastal Waters Project*, or "Special Project 908."

(U) The goals of this project were twofold. First, PRC researchers were tasked to conduct a comprehensive survey and evaluation of China's coastal waters, with an eye towards the creation of new maps of China's coastline. Second, they were tasked to construct a framework for collecting, organizing, and disseminating standardized maritime data across all of the various PRC institutions and organizations operating in China's maritime domain. This framework was named the *China Digital Ocean Information Framework*, or Digital Ocean.

(S//NF)



Sec. 1.4(c)

(U) What is Special Project 908?

(U) Special Project 908

(U) Special project 908 is a major national project to collect and disseminate data about China's littoral region in order to improve China's ocean management capabilities. It is also known as *The Comprehensive Survey and Evaluation of China's Coastal Waters Project*. Special Project 908 was approved by the State Council in 2003.¹

(U) Special Project 908 is managed and coordinated by a leading small group, which is led by the director and Party secretary of the State Oceanic Administration (SOA) Liu Cigui.² The SOA manages and regulates activities in all coastal waters under China's jurisdiction.³ It is the primary organization responsible for organizing and implementing Special Project 908.⁴

(U) According to Xinhua, Special Project 908 has resulted in the collection of highly precise data on China's coastline, renewable energy sources, and maritime disaster risks, as well as in the creation of new topographic maps of China's coastline.⁵

(U) Digital Ocean

(U) Digital Ocean is the simplified name of the China Digital Ocean Information Framework, which is a task under Special Project 908. Digital Ocean collects, organizes, and distributes standardized maritime data, such as information on maritime topography, bathymetry, and weather, across various locations and platforms.⁶ According to Xinhua, the effort included the

basic construction of a network that began in 2007 and was completed by late 2011.⁷ Like Special Project 908, Digital Ocean is primarily managed and coordinated by the SOA.

(U) PRC analysts have indicated that specialized Digital Ocean applications will allow end-users to visualize, analyze, and model the data. According to these analysts, the data are accessed via a specialized network that connects SOA departments and institutes throughout the coastal provinces to the main data center in Tianjin.⁸

(U) Data collection

(U) Descriptions of the sources of data input into the Digital Ocean framework vary. According to one Xinhua article, Digital Ocean contains massive amounts of multi-resolution, multi-temporal, and multi-dimensional maritime data, collected via:

- Remote sensing
- The Geographic Information System (GIS)
- The Global Positioning System (GPS).⁹

(U) According to a detailed journal article presented at a conference sponsored by the International Society for Digital Earth and written by a researcher affiliated with the SOA's National Marine Data and Information Service, the system also collects data via:

- Maritime surveys
- Satellites
- Airplanes
- Ships
- Buoys
- Shore stations.¹⁰

(U) According to the same article, Digital Ocean organizes these data into topical relational databases. The databases include:

- Sea area management
- Island management
- Environmental protection
- Warning and disaster prevention
- Maritime economics and planning
- Maritime supervision of law enforcement
- Maritime rights
- Maritime technology management.¹¹

(U) Special Project 908 is high-profile, well-resourced, and ambitious in scope.

(U) Designed to carry out high-level directives

(U) In 2003, Special Project 908 was approved by the State Council, China's highest executive lawmaking body, and was designated as a "major national project" (*guojia zhongda zhuanxiang*; 国家重大专项).¹²

(U) According to an article from the Hebei Provincial Government website, Special Project 908 corresponds to authoritative Party and PRC government documents. The article states that Special Project 908 was designed to support Jiang Zemin's comments in the 16th Party Congress work report calling on all to "carry out maritime development (实施海洋开发) and do well in the comprehensive improvement of land and resources."¹³

(U) The article also claims that Special Project 908 addressed a requirement in a *gangyao* (纲要), or outline, called "The Outline of the National Maritime Economic Development Plan" (*Quanguo haiyang jingji fazhan guihua gangyao*; 全国海洋经济发展规划纲要). *Gangyao* are authoritative documents that provide policy direction through general guidelines. The outline calls for increasing the contributions of maritime science and technology, an area in which Special Project 908 plays a role.¹⁴

(U) Well-resourced

(U) According to several official sources, Special Project 908 and Digital Ocean have received a large amount of government investment:

- Xinhua claims that Special Project 908 has a larger investigative scope, involves more academic disciplines, adopts more advanced technology, and has *received more investment* than any other national project since the founding of the PRC in 1949.¹⁵
- PRC reporting on government expenditures for Special Project 908 is inconsistent. However, one detailed article from the Wuhan Bureau of State Land Supervision website mentions that since 2004, the national government spent a total of approximately 2.06 billion *yuan* (\$425 million) on Special Project 908, while each coastal province invested nearly 300 million *yuan* (\$49 million). In addition, the article states that the project employed 500 vessels traveling over 200 million kilometers for a total of 20,000 at-sea operational days and involved 30,000 science and technology workers from 180 different work units.¹⁶
- PRC reporting on the project frequently makes reference to outsourcing, and describes the amount of funding spent to conduct quality control and manage project bidding processes. For example, according to the National Satellite Ocean Application Service, an organization subordinate to the SOA, in 2004 alone, the State Oceanic Administration's

Special Project 908 Office spent over 500 million *yuan* on the bidding process for 2005 work.¹⁷

- A significant amount of time has been invested in Special Project 908 as well: the project was approved in 2003, yet basic construction of the China Digital Ocean Information Framework, was not completed until late 2011.¹⁸

(U) Ambitious in scope

(U) According to Xinhua, Special Project 908 was to be the largest, most advanced, and costliest national project since the founding of the PRC.¹⁹ As befitting a project of this scope, its stated goals were far reaching. They included:

- Investigate maritime resources and the environment in China's coastal waters
- Develop China's maritime economy
- Protect China's maritime environment
- Strengthen comprehensive management of the ocean by providing scientific research and technological support.²⁰

(U) These sweeping project goals resulted in several important efforts:

- According to Xinhua, Chinese researchers systematically collected precise, standardized, and large-scale data on the meteorology, ecology, seabed topography, and geophysics of China's coastal waters for the first time.²¹
- Researchers also collected data on:
 - The amount and geographic location of islands in China's seas
 - The length of China's coastline
 - The potential for developing offshore renewable energy sources
 - Maritime disaster risks.²²
- Special Project 908 resulted in a national zoned map of places threatened by maritime disasters as well as high-precision 1-to-50,000-scale and 1-to-250,000-scale topographic maps of the seabed and landform of China's coastal waters.²³

(U) According to the State Oceanic Administration, future goals for Special Project 908 include improving support for:

- The maritime economy and maritime enterprises' sustainable development
- The management and protection of maritime rights
- Research and development for key technologies.²⁴

(U) According to researchers affiliated with the SOA's National Marine Data and Information Service, future goals for Digital Ocean include:

- Collect near-real-time and real-time oceanographic data through national ocean observation networks.
- Strengthen the capacity for maritime data processing
- Establish maritime data centers in order to better share data
- Develop more powerful application systems.²⁵

(U) Special Project 908 has a large bureaucratic footprint.

(U) Special Project 908 and Digital Ocean are both primarily managed by the State Oceanic Administration or various subordinate SOA agencies.²⁶ Special Project 908 has a leading small group, a special project office, and an experts group. Additionally, evidence indicates that approximately 180 work units have played a role in Special Project 908 since it was launched in 2003.²⁷ The number of organizations involved as well as the presence of a leading small group and special project office suggest that the Chinese central government considers Special Project 908 and Digital Ocean to be important. The following are individuals and organizations affiliated with Special Project 908 and/or Digital Ocean as well as their identified areas of responsibility.

(U) The Special Project 908 Leading Small Group: The Leading Small Group is in charge of planning and coordinating Special Project 908.²⁸

- Director: Liu Cigui, director and Party secretary of the SOA
- Deputy Director: Chen Lianzeng, deputy director and Party Committee member of the SOA
- Members include officials from relevant departments in the National Development and Reform Commission and the Ministry of Finance.²⁹

(U) Special Project 908 Offices: Special Project 908 offices have been established within the national State Oceanic Administration and within the oceanic administration bureaus of 11 coastal provinces and municipalities. According to the SOA, these offices are in charge of quality control and possibly project bidding as well.³⁰

(U) Digital Ocean Expert Approval Group: This group evaluated the progress and achievements of Digital Ocean before approving the system in 2011.³¹

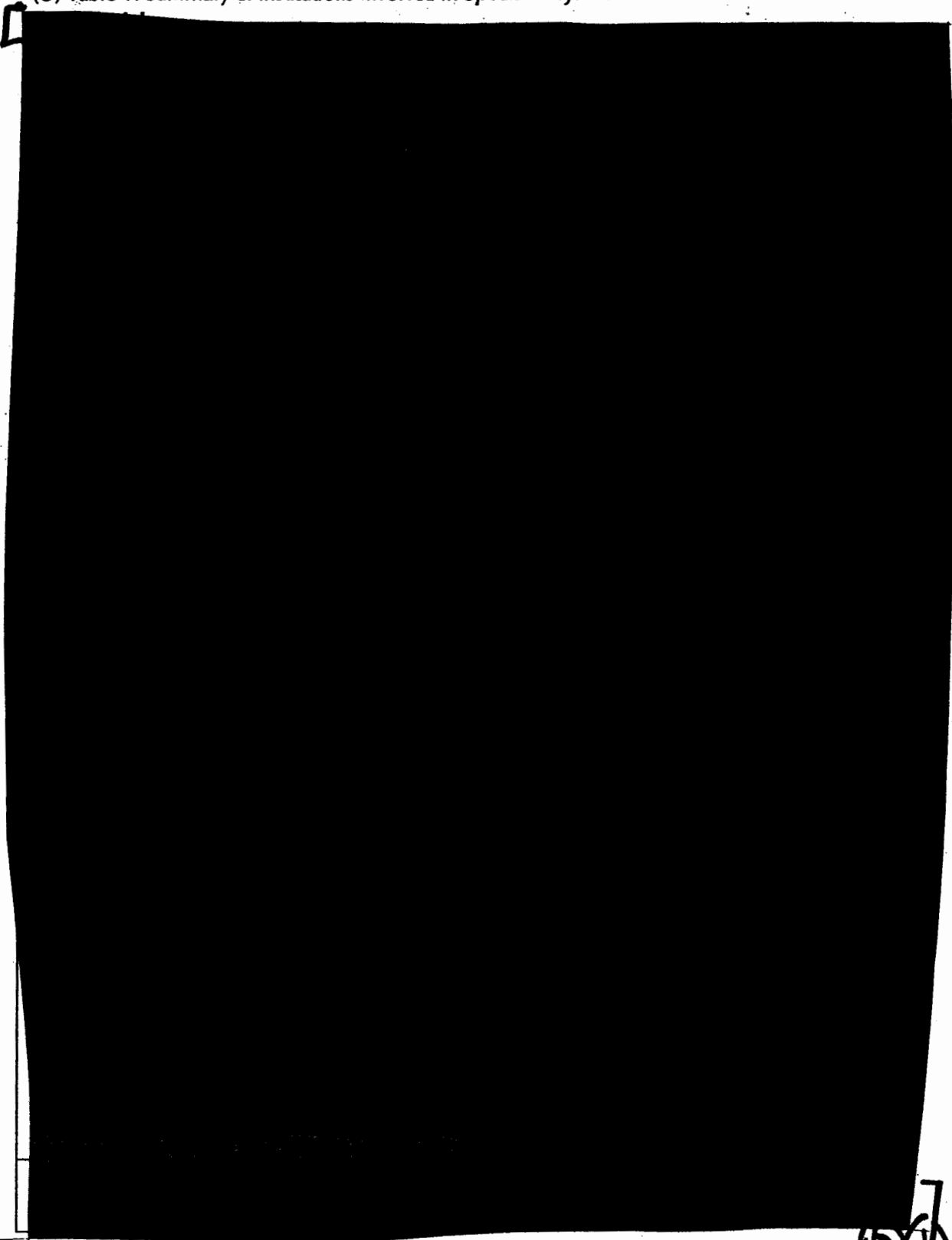
- Director: He Jifeng, a professor at the East China Normal University School of Software Engineering and a member of the China Academy of Sciences. Professor He is also affiliated with Oxford University.

- Deputy Director: retired RADM Yin Zhuo, director of the Navy Informatization Expert Advisory Committee, a member of the Advisory Commission on PLA All-Army Informatization, and a senior fellow at the Navy Equipment Research Institute.
- Members: Personnel from Beijing University, Tsinghua University, the National Development and Reform Commission, and the Ministry of Land and Resources.³²

(U) Other actors: Evidence indicates that approximately 180 work units have played a role in Special Project 908.³³ Over the course of our research, we identified several organizations involved in efforts related to this project. They include:

- The National Marine Data and Information Service, an organization subordinate to the SOA and responsible for coordinating China's maritime information resources, appears to be responsible for developing and operating the Digital Ocean framework.³⁴ It is located in Tianjin.
- The National Digital Ocean Key Laboratory, which is subordinate to the National Marine Data and Information Service and is also located in Tianjin, is charged with developing Digital Ocean applications and services. It was established in September 2012.³⁵
- The Chinese Academy of Science's Institute of Remote Sensing and Digital Earth has developed Digital Ocean technology.³⁶
- Neusoft, a private company that provides information management services, has developed and managed Digital Ocean databases. Neusoft is a large, publicly traded, PRC software engineering company with offices in Europe, Japan, and the U.S. The company has a publicly available website that briefly describes its responsibilities vis-à-vis Digital Ocean.³⁷

(U) Table 1: Summary of institutions involved in Special Project 908



Pages 12 and 13 withheld in their entirety ^{(b)(7)(D)} Sec 1.4(c)

(U) Additional sources of data

(U) A variety of sources can be exploited to learn more about Special Project 908 and Digital Ocean. These sources fall into three categories:

- Journals sponsored by Chinese government organizations
- Academic journals
- Online articles.

(U) We identified six journals issued by the SOA or one of its subordinate offices that have published articles on Digital Ocean and/or Special Project 908.⁴⁸ Three of the six journals are published by the National Marine Data and Information Service, a subordinate SOA office responsible for developing and operating the Digital Ocean framework. These six journals are the most authoritative and most likely to contain reliable information about Digital Ocean and/or Special Project 908:

- *Marine Science Bulletin* (English edition). Sponsor: National Marine Data and Information Service.
- *Marine Science Bulletin* (Chinese edition) (*Haiyang tongbao*; 海洋通报). Sponsor: National Marine Data and Information Service.
- *Ocean Development and Management* (*Haiyang kaifa yu guanli*; 海洋开发与管理). Sponsor: SOA.
- *Marine Information* (*Haiyang xinxi*; 海洋信息). Sponsor: National Marine Data and Information Service.
- *Journal of Marine Sciences* (*Haiyang xue yanjiu*; 海洋学研究). Sponsor: Second Institute of Oceanography (SOA).
- *Ocean Technology* (*Haiyang jishu*; 海洋技术). Sponsor: National Ocean Technology Center (a "public institute" administered by the SOA).⁴⁹

(U) Other journals affiliated with Chinese government institutions that have published on Digital Ocean and/or Special Project 908 include:

- *Marine Science* (*Haiyang kexue*; 海洋科学). Sponsor: China Academy of Science's Institute of Oceanology (State Council).
- *Journal of Fujian Fisheries* (*Fujian shuichan*; 福建水产). Sponsor: Fujian Fisheries Society and the Fujian Fisheries Research Institute (Fujian Province Oceanic and Fisheries Department).

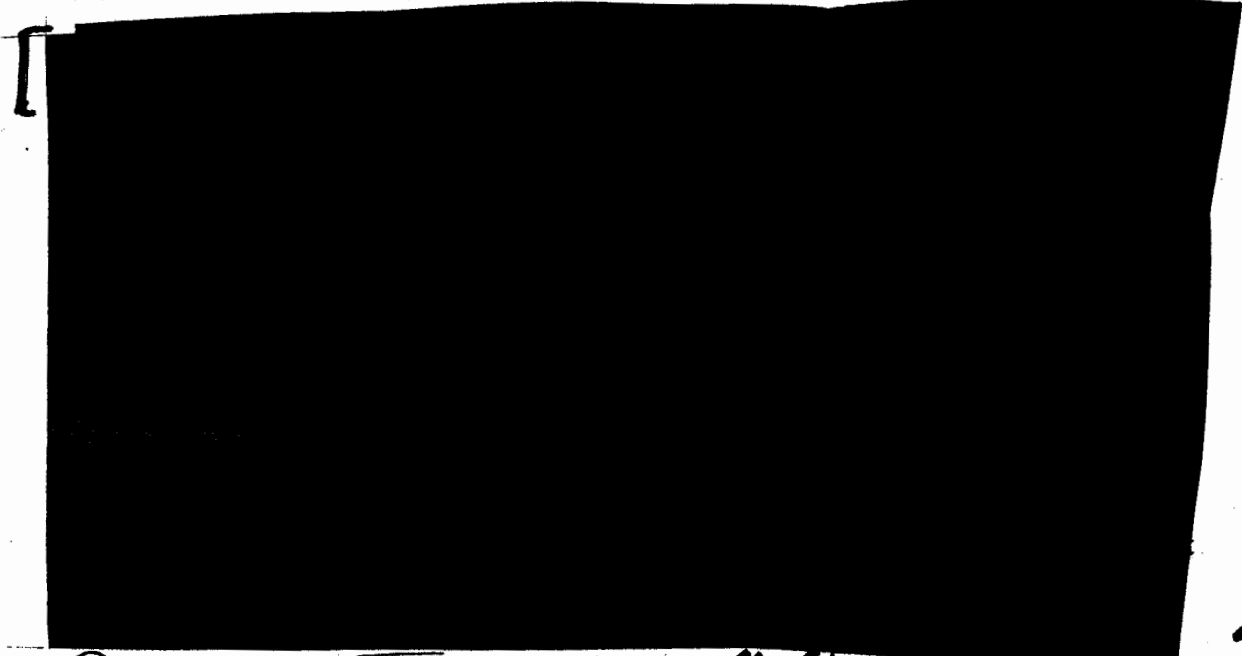
(U) In addition, several journals that are not affiliated with government organizations that have published articles on Digital Ocean and/or Special Project 908:

- *Ocean World* (*Haiyang shijie*; 海洋世界)
- *Microcomputer Information* (*Weiji suanji xinxi*; 微计算机信息)
- *Journal of Sediment Research* (*Nisha yanjiu*; 泥沙研究)
- *Periodical of Ocean University of China* (*Zhongguo haiyang daxue xuebao*; 中国海洋大学学报)
- *Geospatial Information* (*Dili kongjian xinxi*; 地理空间信息).

(U) Researchers and project leaders affiliated with Digital Ocean and/or Special Project 908 have also published in English-language journals such as the *International Journal on Digital Earth* or the *Journal of Coastal Research*. Additionally, The International Society for Digital Earth sponsors an annual conference called the ISDE Digital Earth Summit. The conference has resulted in the publication of English-language papers and PowerPoint presentations containing helpful background information on Digital Ocean.⁵⁰

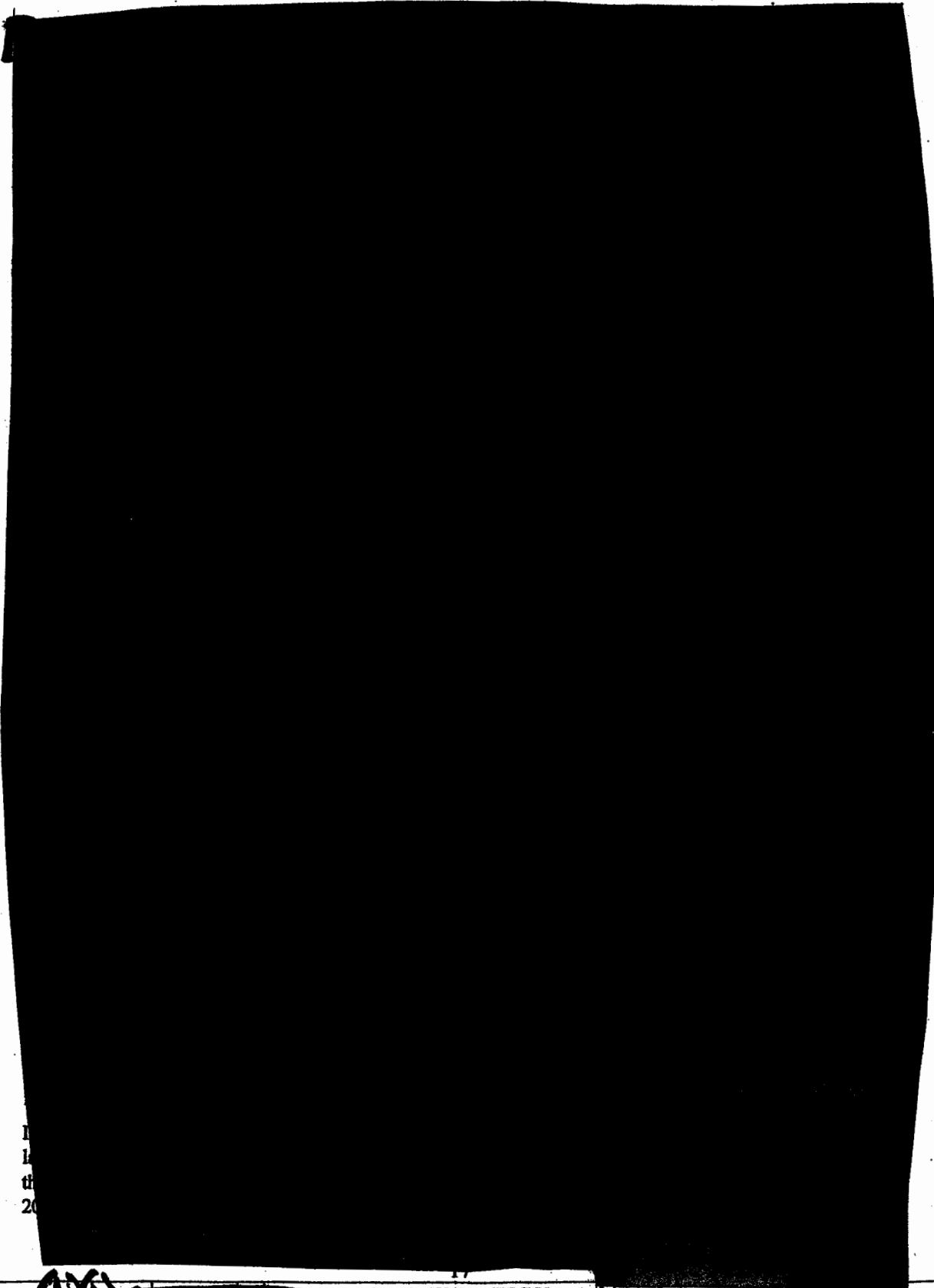
(U) Besides official and academic journals, authoritative information on Digital Ocean can be found in state-run media such as Xinhua, the state news service, as well as *People's Daily*, the daily newspaper of the CPC Central Committee.⁵¹ In addition, the websites of the government organizations responsible for implementing Special Project 908 and Digital Ocean, such as the SOA or the National Marine Data and Information Service, have valuable updates about project work, progress, delegations, and leadership.⁵² Finally, local government websites, especially those of the provinces that have their own Special Project 908 organizations and work plans, have articles that contain valuable information on the project's background and recent developments.⁵³

(U) Conclusion



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(U) Endnotes



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