

GUIDANCE NOTES

GD17-2021



China Classification Society

GUIDELINES FOR SHIP REMOTE SURVEYS 2021

Effective from 1 August 2021

Beijing

Preface

To meet the needs of ship survey, maintain the validity of the certificate during the COVID-19 pandemic, ensure the safety of shipping and protect the marine environment. China Classification Society (CCS) had tested a series of technology for ship remote survey, for standardizing the specific requirements of ship remote survey and providing technical support to new survey technology, CCS had formulated the Guidelines.

The Guidelines specified the relevant requirements of CCS in the implementation of remote survey. While complying the requirements of the Guidelines, the ship remote survey must comply with the relevant requirements of *Rules for Classification of Sea-Going Steel Ships* of China Classification Society, as well as relevant conventions and regulations, the requirements of flag state authorities, port state supervision agencies, regional organizations, etc.

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Chapter I General

1.1 Purpose

1.1.1 The Guidelines specified the implementation requirements of China Classification Society (hereinafter referred to as "the Society" or CCS) for ship remote survey. Based on the relevant survey requirements of *Rules for Classification of Sea-Going Steel Ships of China Classification Society*, as well as the requirements of flag state authorities, relevant conventions and regulations, port state supervision agencies, regional organizations, etc., it specified the particular requirements for the implementation of ship remote survey and can be used as a guidance for CCS surveyors to carry out ship remote survey.

1.1.2 For the specific survey requirements and required electronic documents applicable to the ship remote survey items of the Guidelines, please refer to the Instructions to Surveyors.

1.2 Scope of application

1.2.1 The Guidelines is applicable to the classification surveys of CSA classified ships which applied to the remote survey according to Instructions to Surveyors and the relevant statutory surveys approved by the flag state authorities.

1.2.2 The annual survey and other survey in scope of annual survey shall be approved by the flag state authorities and CCS headquarters, and the real-time video communication shall be implemented as the main method for above mentioned surveys.

1.2.3 In case that the applicant proposes remote survey request other than those specified in 1.2.1 and 1.2.2 of this Chapter, the survey unit shall evaluate the request case by case to determine whether remote survey applicable, and report to the flag state authorities and CCS headquarters for approval.

1.3 Definition

1.3.1 Remote survey: the survey method that surveyors do not attend the survey site in person but obtain the process or survey process information equivalent to the on-site survey with the application of Internet technology.

1.3.2 Survey process information: the electronic documents or real-time video communication records that can indicate the ship structure and equipment condition or survey process. It is generally transmitted through Internet to the remote surveyor for verification. The survey electronic documents can be photos, videos, documents, statements of the captain or chief engineer, etc.

1.3.3 Unmanned Aerial Vehicle (UAV): the unmanned aircraft, which is operated by wireless remote control panel and/or programmed remote control device. It can be controlled by flight control personnel or pilot and used to collect survey process information.

1.3.4 Intelligent remote glasses: wearable glasses integrated with intelligent functions such as video and photo shooting, video communication, etc., and used to collect survey process information.

1.3.5 Real-time video communication: the application service that uses the Internet technology to realize the synchronous transmission of sound and video through the communication platform.

1.4 General requirements

1.4.1 The implementation of remote survey does not affect other requirements of international conventions, flag state authorities, port state supervision agencies, regional organizations and the Rules for Classification of Sea-Going Steel Ships of CCS. In case of any inconsistency between the above requirements and the Guidelines for Ship Remote Surveys or the Instructions for Ship Remote Survey, the requirements of international conventions, flag state competent authorities, port state supervision agencies, regional organizations and Rules for Classification of Sea-Going Steel Ships of CCS shall be strictly applied.

1.4.2 The applicant has the responsibility and obligation to ensure the authenticity and

accuracy of information regard to the remote survey, and undertake the corresponding legal and economic responsibilities. CCS has the right to terminate the remote survey as false information provided on the survey process. If it is found any fraud or fake in the process of remote survey, CCS will withdraw the survey conclusion and/or cancel the certificates.

1.4.3 When applying for remote survey, the applicant shall fully consider the feasibility of remote survey and the submission of required electronic documents. If the remote survey mode of real-time video communication is adopted, the applicant shall ensure that:

1) The network should stably and effectively cover all the places and areas where the survey implemented.

2) The crews who participate the remote survey shall be equipped with appropriate audio and video acquisition equipment (such as smart phones, handheld PTZ, de-noised earphones, etc.).

1.4.4 The crews who participate the remote survey by real-time video communication shall be trained for the real-time video communication platform and survey requirements, and meet the requirements of cooperating with the surveyors for remote survey.

1.4.5 For the software and hardware configuration of real-time video communication remote survey, please refer to Chapter IV of the Guidelines.

1.4.6 When the remote survey involves the service of the suppliers, the service personnel of the suppliers shall attend the vessel to provide the service with surveyors' satisfaction. When it is impossible to arrange the service personnel of the supplier onboard the vessel, alternative measures shall be considered and submitted to the flag state authorities or CCS headquarters for approval.

Chapter II Collection and Transmission of Survey Process

Information

2.1 Network conditions

2.1.1 The ship shall have available network for real-time video communication or remote survey process information transmission. The applicant shall conduct network condition test with the ship in advance to ensure the smooth implementation of remote survey. The network condition test isn't required when the surveyors think it is not necessary to have available network for real-time video communication or remote survey process information transmission.

2.2 Collection of survey process information

2.2.1 The applicant may use smart mobile devices such as smart phones, tablet and smart remote glasses, or scanners, digital cameras or video cameras, UAVs and other devices to collect survey process information.

2.2.2 Where real-time video communication is used to provide survey process information, smart mobile devices equipped with video communication software and available account shall be provided on board. In order to ensure communication quality, users shall wear earphone with microphone (de-noised earphone preferred) at the same time.

2.2.3 The applicant shall take effective measures to ensure the quality of survey process information, and the surveyors can carry out remote survey through them. There shall be enough light in the location of real-time video communication to clearly reflect the survey process and details, with clear video and consistent communication process. The videos and photos shall be able to clearly reflect the condition and deficiencies of hull structure and equipment, and the video file shall be able to smoothly record the test result and test process (if necessary).

2.3 Transmission of survey process information

2.3.1 "Required electronic documents" for remote survey shall be in a format acceptable to both parties.

2.3.2 E-mail or the other method accepted by the surveyors can be used, but attention shall be paid to the integrity and safety of the information transmission.

2.3.3 When collecting and transmitting the survey process information, the applicant shall consider the safety management system of the ship management company and the restrictions of authorities to the use of electronic equipment and network connection, such as the explosion-proof requirements for the use of electronic equipment.

Chapter III Survey Procedures

3.1 Acceptance of survey

3.1.1 The ship remote survey shall be carried out by the CCS office nearby the ship's location. If necessary, the ship's customer manager' office or the headquarters can coordinate with other office to provide support or carry out remote survey. The applicant request the remote survey through Customer Service Management system, fax, e-mail, etc.

3.2 Survey and assessment

3.2.1 After receiving the survey request, the survey unit shall confirm the survey items and the actual ship condition to the applicant in time, preliminarily assess the communication conditions for the implementation of the remote survey, conduct the assessment as required, and feedback the results of remote survey assessment to the applicant accordingly. In case of involving the CCS headquarters or the flag state authorities, instructions and approval for remote survey shall be obtained accordingly.

3.3 Survey implementation

3.3.1 After confirming the remote survey condition, the surveyor and the applicant shall confirm the survey liaison person, on-board liaison person, ship position information, survey date and time, email address of receiving e-certificate or document, etc. The surveyor shall send survey requirements according to the applicable regulations of remote survey from the Instructions to Surveyors.

3.3.2 The applicant shall assign ship officers to cooperate with the surveyors to carry out the remote survey at the agreed time. The real-time video communication is preferred in the survey. After the net connected between the officers and the surveyors , the survey process information shall be collected in real time according to the requirements of the surveyors.

3.3.3 If real-time video communication fails due to network problems or other reasons, the surveyors can complete the survey using photos or videos (taken as instructed by the surveyors) provided by the crew officer.

3.3.4 The surveyors shall verify the survey process information provided by the applicant. Where the surveyors think that the survey process information can't fully reflect the actual situation of the survey items, the applicant shall collect the survey process information again according to the requirements until the surveyors can accurately draw the survey conclusion.

3.3.5 Where the surveyors find that the technical condition of the ship is beyond the scope of remote survey or the communication conditions cannot meet the survey requirements, the survey can be suspended and the follow-up measures shall be taken accordingly:

1) When the conditions for implementing remote survey recovered, the remote survey can be continued with the approval of the surveyors.

2) Surveyors shall confirm all survey items be completed. With the consent of surveyor the applicant can request other survey for the remaining survey to be implemented as the remote survey condition fulfilled. The surveyors shall confirm there is no overdue survey items before suspend the survey.

3) Where the applicant confirmed with the surveyors that the remote survey conditions

cannot be fulfilled continuously, the remote survey can be cancelled.

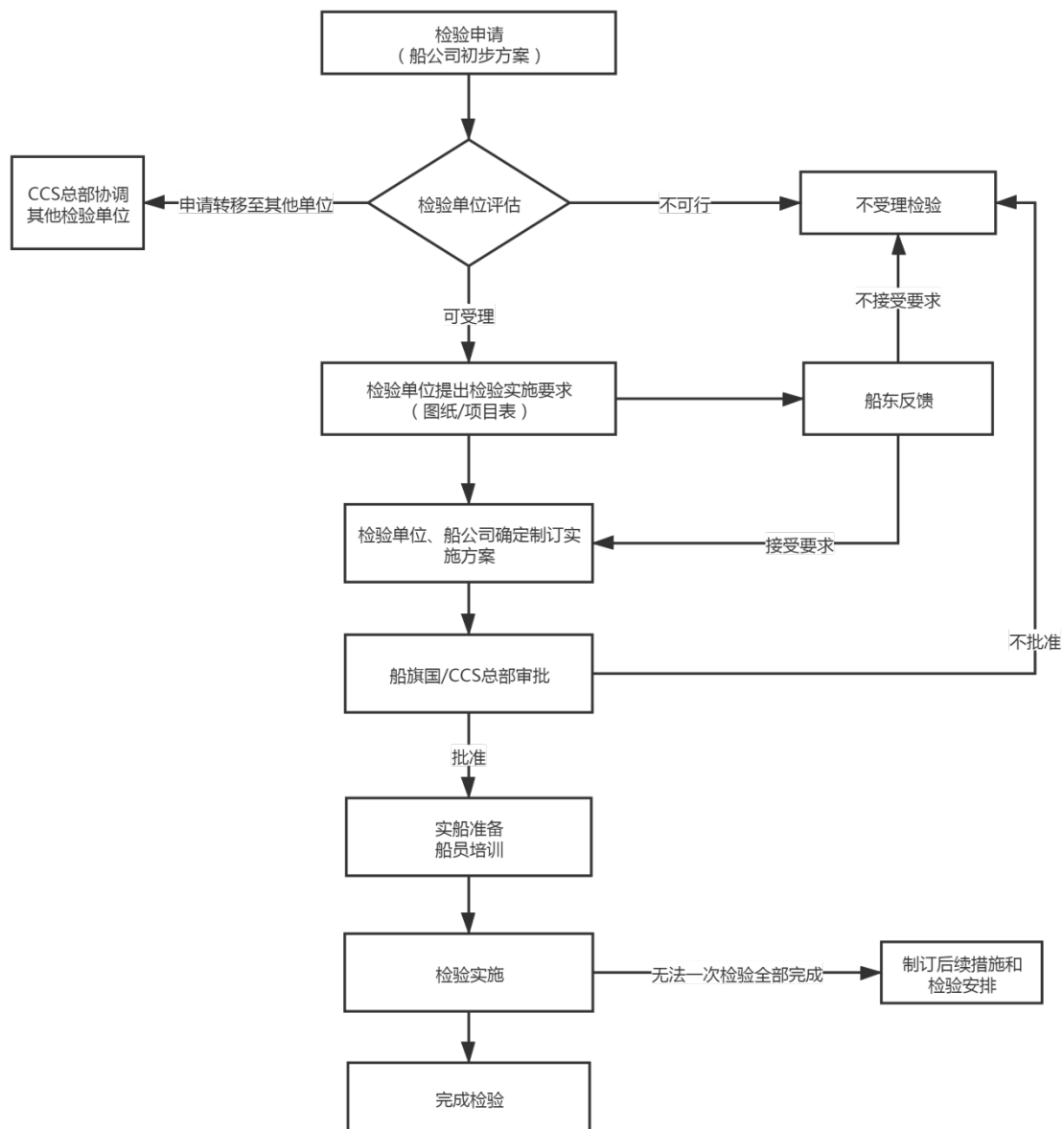
4) When any defect or fault be found during the remote survey, the surveyor can suspend the survey and guide the ship's crew to take the temporary repair to the defects or faults. If necessary, the surveyor shall report the findings to the flag state authorities or CCS headquarters. The applicant shall arrange a follow-up boarding survey at convenient port or shipyard within the specified time as required by the surveyors.

5) If necessary, the survey unit shall report to CCS headquarters for further instructions after the survey be suspended.

3.3.6 After the completion of survey, the surveyors shall confirm the process and conclusion of the remote survey be recorded on the logbook, and the applicant shall provide the relevant contents of the logbook and the "required electronic documents" to the surveyor.

3.3.7 With the satisfaction, the surveyors shall issue/endorse the certificates and/or report according to CCS procedure.

3.4 Process



检验申请（船公司初步方案）	survey request (preliminary plan of shipping company)
CCS 总部协调其他检验单位	CCS headquarter coordinates with other CCS branch
申请转移至其他单位	Apply for transfer to other office

检验单位评估	assessment by survey unit
不可行	infeasible
不受理检验	Rejected
可受理	Accepted
不接受要求	Can't fulfil requirements
检验单位提出检验实施要求（图纸/项目表）	Survey unit raise survey implementation requirements (drawings/survey items)
船东反馈	Feedback from ship's owner
检验单位、船公司确定制定实施方案	Survey unit and ship's management company make the implementation plan
船旗国/CCS 总部审批	Approval by flag state authorities/CCS headquarters
不批准	Not approved
批准	Approved
实船准备 船员培训	Onboard preparation and training for crews
检验实施	Survey implementation
无法一次检验全部完成	Unable to complete all survey items

制定后续措施和检验安排	make follow-up plan and survey arrangements
完成检验	Survey completed

Chapter IV Remote Survey by Real-time Video Communication

4.1 Scope of application

4.1.1 Real-time video communication shall be the prior survey mode for implementing the following remote survey types:

Annual survey

2) Other survey in scope of annual survey

3) Other Remote survey that surveyors consider the real-time video communication is necessary.

4.1.2 Real-time video communication is the prior survey mode for implementing the above mentioned surveys. According to the actual situation, the surveyors can accept photos and videos as supplementary means of information collection in case of poor communication conditions.

4.2 Definition

4.2.1 Ship end: Refers to the facilities set up for remote survey of the ship receiving remote survey.

4.2.2 Remote end: Refers to the facilities that receive the communication information sent from the ship during the survey.

4.2.3 Remote survey facility of real time video communication: Refers to the system

composed of software and hardware equipment used for real-time video communication survey at ship end and remote end, including communication network equipment, audio and video acquisition equipment, remote end hardware equipment and communication platform, etc.

4.3 Equipment requirements

4.3.1 Remote survey facilities of real-time video communication shall meet the following requirements:

- 1) The smooth communication between the remote surveyors and crews;
- 2) The remote surveyor(s) are provided with the survey pictures of equivalent quality to that from boarding survey;
- 3) The efficient power supply of equipment to cover all the survey process.

4.3.2 Communication network equipment

4.3.2.1 The communication network shall realize real-time, fast, clear and stable transmission of audio and video information and interactive instructions under all reasonably foreseeable conditions.

4.3.2.2 The layout of communication network shall be able to cover the survey area, e.g. engine room, steering gear room, other machine spaces, accommodation area, public place, service space, control station, forecastle and cargo holds (when applicable) for annual survey.

4.3.3 Audio and video acquisition equipment

4.3.3.1 Audio and video acquisition equipment refers to the equipment that collects, sends and receives voice, image, video, etc., which can be smart phones, smart glasses, UAVs, etc.

4.3.3.2 Audio and video acquisition equipment shall be able to realize the real-time interaction with clear voice and high-definition image/video.

4.3.3.3 Audio and video acquisition equipment can be combined with other auxiliary equipment, such as smart phone with anti-shake PTZ and Bluetooth noise-canceling

headphone, which can prevent picture shaking and enhance sound transmission effect.

4.3.4 Remote end hardware equipment

4.3.4.1 Remote end equipment shall be able to realize effective audio and video interaction with the ship end. The image display of the equipment shall not freeze, the color shall not be distorted, and the picture shall have no obvious delay.

4.3.5 Communication platform

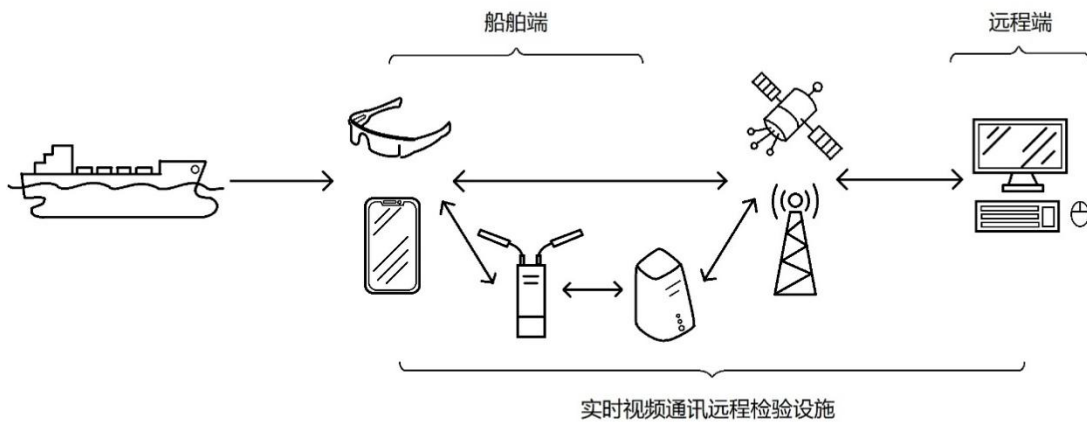
As an information interactive integration platform connecting ship end and remote end, communication platform (interactive software) shall be able to interact audio and video information in real time, stable and high definition manner, and identify, manage and store the interactive audio and video information.

4.4 Equipment configuration examples

The configuration of communication equipment shall meet the requirements for real-time video communication. The following is an example of the configuration of communication equipment. The equipment configuration can be adjusted according to the requirements of the surveyors, ship type, ship size, port communication signal conditions and other factors.

Item	Equipment	Description
Communication network equipment	Customer Premise Equipment	To ensure the communication quality, the engine room shall be equipped with 2 additional individual equipment in addition to the main individual equipment, and the deck shall be equipped with at least 1 additional individual equipment.
	Individual mesh distributed router	

Audio and video acquisition equipment	Smart phone + anti-shake PTZ + Bluetooth noise-canceling headphone	
	AR smart glasses	
Remote end hardware equipment	General computer	
Communication platform	Facepro	



船舶端	Ship end
远程端	Remote end
实时视频通讯远程检验设施	Real-time video communication remote survey facility

4.5 Training

4.5.1 Before implementing real-time video communication remote survey, the survey unit shall send the crew training materials, including Instruction Manual of Real Time Video Communication Survey Crew Training and crew training videos to the shipping company and the ship side by email or communication software, The company or the ship side shall arrange

the crew members for participating in the remote survey to conduct independent training according to the requirements of the training documents.

4.5.2 The ship side shall record the above training in relevant documents.

4.6 Survey implementation

4.6.1 The ship side shall draw up the layout plan of the ship end hardware equipment and arrange the real-time video communication remote survey facilities at the ship end according to the plan;

4.6.2 The surveyors shall be familiar with the ship structure and equipment, and consult the relevant drawings in advance when necessary, such as general arrangement, engine room arrangement, fire control plan, life-saving equipment arrangement, etc.

4.6.3 The surveyors shall confirm that the communication is in good condition, and the crew has received training in advance. If necessary, the surveyors can provide guidance about the equipment layout and crew training.

4.6.4 At the beginning of the survey, the surveyors shall call the crew participating in the remote survey for the first meeting to confirm the scope, items and arrangement of the survey.

4.6.5 During the survey, the surveyors shall carry out the survey and test according to the requirements for on-site boarding survey. If necessary, the relevant survey process information can be saved in videos and photos. For survey process information, video and photos considered by the surveyors, the collection time shall be recorded.

4.6.6 At the end of the survey, the surveyors shall hold a final meeting to draw the survey conditions and their conclusions to the ship side.