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GUIDANCE NOTES

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## **Guideline for Remote Survey of Marine Products**

**China Classification Society (CCS)**

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## History

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## **1. Scope of application**

1.1 This guideline is applicable for the remote survey of the projects that is carried out to survey products with remote survey technologies by China Classification Society (hereinafter referred to as CCS) and manufacturers.

1.2 Remote product survey is applicable for the products/survey items that are specified in Clause 7.1 of the guideline under the premise of meeting *CCS Rules for Classification of Sea-Going Steel Ships*, the related requirements of flag states' governments (if applicable) and this guideline.

1.3 If a survey is to be done remotely, CCS and the applicant shall negotiate about and sign an agreement according to the requirements of the guideline.

## **2. Normative references**

*CCS Rules for Classification of Sea-Going Steel Ships*

## **3. Terms and definitions**

(1) Communication platform (interactive software) refers to application services (excluding communications network infrastructures) that can utilize modern digital communications technologies to remotely present survey process information in real time by means of audio and video; it has the functions of annotation, taking photos and recording video as well as the information transmission functions such as text and document transmission during the implementation of product remote survey.

(2) Information acquisition equipment refers to the equipment integrating the functions of acquiring audio, video and other related information, for example, smart glasses, smart phones, tablet computers and other equipment that are arranged at product survey/test site and have the functions of audio and video acquisition.

(3) Remote survey equipment refers to a complete set of software and hardware facilities, including information acquisition equipment and applicable communication platform, which are used, recommended or accepted by CCS marine surveyors to implement remote survey.

(4) Remote survey of marine products refer to a method adopted by marine surveyors outside survey sites to utilize remote survey equipment and platforms to carry out marine product survey.

(5) Information about survey process refers to real-time audio and video communication contents or electronic files that can reflect the appearance, structures, performance and survey process; they are generally transmitted through modern digital communications technologies (including audio/video information acquisition equipment and communication platforms) to the marine surveyors who will use them as the basis of survey and judgment in remote survey. The electronic files about survey include survey photos, video files, survey/test reports, and drawings.

(6) Site terminals refer to the facilities/equipments required to be arranged at the product survey/test site in order to carry out product survey remotely for the manufacturer who submits the application for requesting CCS to carry out remote survey; they include network-related software and hardware equipment, audio/video acquisition equipment (earphones and microphones should be included as necessary), and communication platforms.

(7) Remote terminal refers to the equipment or system that receives audio/video information sent from the site terminals and sends the information including operation commands through the communication platform to the site terminals according to

actual requirements during remote product survey, including the equipment and system that are utilized by interested parties, for example, the marine surveyors, experts, ship owners and manufacturers of CCS who implement remote survey.

#### **4. General regulations**

4.1 Remote product survey is an alternative mode of the site survey by the marine surveyor. The effects of implementing remote survey shall meet the requirements of the related survey items.

4.2 The manufacturer that applies for implementing remote survey for the first time shall not implement any remote survey until the survey implementation unit of CCS evaluate and approve according to the guideline, and relevant agreements that are signed.

4.3 Manufacturers have the responsibility and obligation to guarantee the authenticity and correctness of the provided information.

4.4 Before or during remote survey, if remote survey is proven not applicable, or implementation conditions of remote survey cannot be satisfied, marine surveyors are entitled to refuse/terminate such remote survey and inform manufacturers of carrying out site survey instead.

4.5 Manufacturers shall ensure and promise that remote survey is applicable as there is no special confidentiality requirement about the products, places and related provided data that are involved in the proposed remote survey. CCS bears no responsibility of any resultant related confidentiality problem.

4.6 For the products/survey items involved in the remote survey that has been approved by CCS to be implemented, CCS has the right of carrying out site survey

regularly/irregularly.

4.7 The implementation of remote product survey shall not affect other requirements specified in *CCS Rules for Classification of Sea-Going Steel Ships*.

## **5. Conditions of carrying out remote survey**

### **5.1 Qualifications of manufacturers**

(1) Generally, manufacturers shall obtain the approval of CCS; for any products for which no approval are required in the regulations, the corresponding manufacturers must have cooperated with CCS continuously for at least 5 years; in addition, they shall have effectively-operating quality system and good reputation, and can provide high product quality.

(2) The manufacturers shall hire the personnel meeting the requirements of Clause 5.4 in the guideline.

(3) The quality system documents of the manufacturers shall include the management regulations about remote survey.

(4) The manufacturers shall sign agreements about remote survey (Appendix 1) with CCS and conform to the related regulations about remote survey that are specified by CCS.

### **5.2 Software and hardware equipment for manufacturer**

(1) The software and hardware equipment that can be used for remote survey shall be arranged for the manufacturer proposed to be surveyed remotely, including network equipment, information acquisition equipment and communication platforms. The audio and video communication effects of the related equipment shall meet the requirements of the related survey projects.

(2) Manufacturers shall take effective methods to ensure that the use of the survey equipment at remote terminal can obtain expected effects and be responsible for daily management and maintenance of the survey equipment at site terminals.

#### 5.3 Environment of implementing remote survey by manufacturer

(1) The network within the manufacturer survey area shall be stable and have the bandwidth meeting the demand of remote survey.

(2) The manufacturer shall ensure that there are sufficient lighting within the survey area and control the environmental noise within the area so as to guarantee smooth remote survey.

#### 5.4 Personnel of manufacturers

The manufacturer shall designate the personnel responsible for quality control and implementation of remote survey. The designated personnel shall know about the site survey contents and requirements of CCS for applicable products, master the use methods of remote survey hardware equipment and its auxiliary equipment, the downloading and functional application of communication software, and be capable of assisting marine surveyors to carry out remote survey effectively during the implementation of remote survey.

#### 5.5 Management regulations of manufacturers

(1) Manufacturers shall prepare management regulations for remote survey or conform to the management regulations specified by CCS for remote survey, including the duty list of the remote surveyors (including the personnel responsible for remote survey quality, the personnel responsible for labeling/identifying product survey mark B and the personnel responsible for survey and tests), the management

regulations of the information acquisition equipment and communication equipment for remote survey (arrangement, storage and use of the equipment at the site terminal), the management of survey mark B authorized by CCS and records (if applicable), implementation methods and steps, the product/survey items proposed to be surveyed remotely and the submission of survey data records and reports. The completed regulations shall be submitted to CCS for future reference.

(2) The basic contents of the agreements about remote survey shall include

i) The products and survey/test items for which the application for the remote survey mode implemented by CCS is proposed;

ii) The management documents about remote survey that are prepared by the manufacturer, including the authorization and management of the related personnel and the use and management of the steel stamps authorized by CCS (if applicable).

iii) The lists of the personnel designated by the manufacturer to be responsible for remote survey quality, the personnel labeling/identifying the product survey mark B and the designated personnel for survey/tests; if there is any change of personnel, CCS shall be informed immediately;

iv) The list of the related equipment ensuring the implementation of remote survey; CCS shall be informed in time in case of any change of equipment.

(3) The contents of the management regulations for the use of authorized steel stamps shall include:

i) The identification types and numbers of authorized steel stamps;

ii) The applicable products and locations of authorized steel stamps;

iii) The receiving and returning records of authorized steel stamps.

## **6. Technical requirements of remote survey equipment**

### 6.1 Communication network

The network shall be arranged to cover through the survey area to ensure smooth remote survey.

### 6.2 Mobile information acquisition equipment

Mobile information acquisition equipment includes the acquisition equipment recommended by CCS or other equipment accepted by CCS. The basic requirements of the hardware for them are:

(1) They shall have anti-vibration functions, and there shall be no color distortion in acquired images.

(2) They shall have the function of sound playback to ensure normal communication and connection.

(3) They shall be equipped with video display devices and be able to output the texts and image information sent by marine surveyors.

(4) They shall be compatible for the corresponding communication platform and can fulfill the related functions of the communication platform.

### 6.3 Fixed information acquisition equipment

Fixed information acquisition equipment includes the fixed monitoring cameras and the corresponding data transmission and storage equipment that are arranged by the manufacturer within the survey area. The basic requirements of hardware for fixed survey equipment:

(1) The sufficient number of fixed cameras shall be arranged to ensure the audio and video data of the survey process and information within the survey area can be recorded and sent in real time.

(2) There shall be no color distortion in the images acquired by fixed information acquisition equipment.

(3) Fixed information acquisition equipment shall be equipped with loudspeakers to ensure normal communication and connection.

(4) Fixed information acquisition equipment shall be equipped with video display devices and be able to output the texts and image information sent by marine surveyors.

#### 6.4 Communication platform

The communication platform, as an information interaction and integration platform connecting site terminals and remote terminals, relies on wireless Internet technologies and utilizes information acquisition and interaction terminals to fulfill the transmission, processing and storage management functions for the information including real-time, stable and high-resolution interactive audio and video as well as texts. The communication platform shall meet the following basic requirements:

(1) The participants of the survey shall be able to implement two-way audio and video data interaction simultaneously, with the general quality of 1080p and 25fps. The time delay in interaction of audio and video shall not be longer than 1s.

(2) The platform supports the marine surveyor and the manufacturer to mark with graphs and texts and display the images during real-time audio and video transmission.

(3) If necessary, the platform allows recording and storing audio and video during survey, and can name and remark the stored video data.

(4) The platform provides the functions including supporting client login, maintaining the on-line state of the client and allowing the administrator to manage participants' right of dialogue.

## **7. Implementation of remote survey**

### **7.1 Applicable products/survey items and principle-based requirements**

(1) The products/survey items for which remote product survey is applicable are:

#### **1) Materials**

Applicable products: rolled products (e.g. steel plates, steel pipes, section steel and rolled nonferrous metal products), castings and forgings, anchors, cable chains and their accessories, screw propellers, steel wire ropes, fiber ropes and plastic pipes.

Applicable survey items: sampling, tests of materials' physical and chemical properties, the dropping, tension and forge tests of anchors, the static/dynamic balancing tests of screw propellers as well as the steel stamp transferring of samples and finished products.

#### **2) Mechanical equipment**

Applicable products: marine pumps, heat exchangers, refrigerating devices, pressure vessels, fans, oil separators, deck machineries, lifting equipment, hydraulic equipment, gear boxes, diesel engines, the castings, forgings and parts of diesel engines, lateral thrusters, outfitting equipment, piping valves and generator sets.

Applicable survey items: assembling survey, tests of general functions, intensity tests, sampling and steel stamp transferring.

3) Electrical equipment

Applicable products: electric control boxes, generators, motors, cables and transformers.

Applicable survey items: electrical performance tests, appearance inspection, cold insulation tests and voltage-endurance tests.

(2) The items for which remote product survey is temporarily inapplicable are:

a. Remote survey shall not be applied for the defect treatment of materials; no remote survey shall be allowed for nondestructive testing.

b. If remote survey cannot obtain the equivalent effects to site survey, marine surveyors shall never adopt remote survey.

(3) Besides these mentioned in (1) and (2), the marine surveyors shall specify both products and survey items for the survey in the agreements with the manufacturer based on the actual conditions of the manufacturer.

7.2 Carrying out of remote survey

7.2.1 Confirmation before remote survey

After the CCS marine surveyors accept the designation, whether the survey will be carried out shall be determined after evaluation according to the agreements concluded by the both parties, and communication and agreement shall be made with manufacturers in advance.

7.2.2 Implementation of remote survey

(1) The survey shall be carried out according to the approved *Plan of Product Survey* (if any) for the predetermined products/survey items.

(2) After successful completion of survey, CCS survey mark B shall be identified

on the product, and the identification shall conform to the requirements of Appendix 1 and the regulations of CCS;

(3) After survey, the manufacturer shall keep survey records or prepare survey reports, and submit to the marine surveyor of CCS in time. In the records or reports, remote survey shall be indicated as the survey mode.

(4) After obtaining the permission of the manufacturer, CCS can save and store the necessary data, e.g. photos and videos, during survey.

### **8. Maintenance of remote survey**

For the manufacturer adopting remote survey, the effectiveness of remote survey shall be maintained. For the manufacturer that has obtained the certificate of approval, CCS shall review and verify, by means of regular review, additional review, renewal of the certificate of approval, etc., the management of the manufacturer's remote survey, including but not limited to personnel, equipment and authorized steel stamps; generally, for the manufacturer requiring no approval, CCS shall carry out effectiveness confirmation, combined with site survey, at least once per year, and indicate in the relevant reports.

For the manufacturer adopting remote survey, its software, hardware and other related aspects shall always conform to the related requirements in Clauses 5 and 6 in the guideline.

### **9. Termination and restoration of remote survey**

9.1 For the manufacturer carrying out remote survey, CCS shall terminate remote survey immediately in any of the following case:

(1) During daily survey or review, it is found that the required conditions for

carrying out remote survey cannot be satisfied, or there is any falsification or any other misconduct;

(2) The invalidation, suspension or revocation of the certificate of approval is caused by the situation specified in Clause 3.1.8, Chapter 3 of Part 1 in *CCS Rules for Classification of Sea-Going Steel Ships*;

(3) According to evaluation, the signatory manufacturer cannot maintain the conditions mentioned in the above Clauses 5 and 6;

(4) Other situation where CCS considers termination is necessary.

9.2 The manufacturer can terminate and suspend the agreement of remote survey, and shall inform CCS in writing.

9.3 During the agreement's term of validity, remote survey shall be terminated if some conditions specified in the above Clause 5 are temporarily not met.

9.4 The application of the manufacturer for restoring remote survey shall be evaluated and agreed by CCS.

Appendix 1: Sample for Reference of the Agreement on Remote Survey of Marine Products

**Appendix 1: Sample for Reference of the Agreement on Remote Survey of Marine Products**

**Agreement on Remote Survey of Marine Products  
(Sample)**

No.

Party A: \*\*\* Division/Office of \*\* Branch of China Classification Society  
(hereinafter referred to as CCS) (Party A)

Party B:

According to the related laws and regulations as well as the related regulations of *CCS Rules for Classification of Sea-Going Steel Ships*, in order to facilitate the production arrangement of the manufacturer, Party A and Party B followed the principle of voluntariness and good faith and signed this agreement on remote survey of marine products.

**I. Description of remote survey of marine products**

The remote survey of marine products, as an alternative mode of the site survey conducted by the marine surveyor of CCS, has equivalent effects to the site survey.

**II. Responsibilities and obligations of remote survey of marine products**

1. Both Parties A and B have responsibilities and obligations of ensuring the equipment surveyed remotely is in a good, available state.
2. Party B promises to keep the principle of integrity in mind, ensure the authenticity of the scene video, reporting data and other items that are provided during remote survey, and undertake the resultant responsibilities.
3. Party B shall designate personnel to undertake the management and

implementation of remote survey, including personnel administration (the personnel responsible for labeling/identification, survey/tests, etc.) and the management of the survey mark B for marine products (if applicable), report the related information to Party A, and inform Party A any change of personnel.

4. Party B shall be responsible for ensuring that the marine products surveyed remotely meet the technical requirements of conventions, laws and regulations, CCS regulations, the standards approved by CCS, etc. The products must meet the technical standards adopted when the CCS marine surveyor participates in site survey. In case of any violation, Party B shall assume any possible resultant responsibility.

5. Party B shall promise that remote survey is applicable as there is no special confidentiality requirement about the products, places and related provided data that are involved in the proposed remote survey. Party A undertakes no responsibility of any resultant related confidentiality problem.

6. Party A shall conform to the relevant regulations of *Rules for Classification of Sea-Going Steel Ships* and maintain secrecy for the reports and data that are submitted by Party B.

7. Party B shall use the survey mark B according to the requirements of Chapter 3 of Part I in *Rules for Classification of Sea-Going Steel Ships*.

8. Party A reserves the right to visit the site of Party B anytime and verify the management and implementation of the remote survey carried out by Party B.

### **III. Details of carrying out remote survey**

1. The names of the products and survey/test items that are to be surveyed remotely;

2. The personnel responsible for the management, labeling/identification and survey/tests of the remote survey of marine products who are designated by Party B.

Name:

Department:

Phone number:

E-mail:

#### **IV. Conditions of maintaining agreement effective**

1. If Party A finds out that Party B cannot meet Party A's requirements in the aspects such as remote survey management of marine products, Party A is entitled to require the immediate termination of this agreement and take other necessary measures.

2. Either party that requires to adjust this agreement shall negotiate with the other party one month before the implementation, and shall resign another agreement.

3. Either party that requires to terminate this agreement shall inform the other party in writing.

#### **V. Term of validity**

This agreement comes into effects on the date of the signing and sealing by both parties and is effective till MM/DD/YYYY.

#### **VI. Methods of dispute settlement**

If there is any dispute during the term of validity of this agreement, both parties shall settle it through negotiation, and either addition or supplement is allowed to the

agreement. If negotiation cannot settle the dispute, follow the related regulations in *CCS Rules for Classification of Sea-Going Steel Ships*.

**VII. Miscellaneous**

1. Other miscellaneous items uncovered in this agreement shall be negotiated by Party A and Party B;
2. This agreement is made in 2 originals, one for either party.

Signed by representative of Party A

Signed by representative of Party B

Date:

Date:

Official seal

Official seal