For a thorough introduction of Your AKVA product, we ask that all users read this entire manual. If questions occur, contact us!

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This document may also be read and downloaded from our website, see www.akvagroup.com/products/user-manuals

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Table of contents

1 Safety ................................................................................................................................. 4
  1.1 Safety symbols ................................................................................................................. 4
  1.2 Safety instructions ............................................................................................................. 4

2 Introduction ......................................................................................................................... 5
  2.1 How to use this manual ................................................................................................. 6
  2.2 About AKVA group ......................................................................................................... 7
  2.3 About AKVAconnect Camera Control ............................................................................. 8

3 Installation ........................................................................................................................... 10

4 License ................................................................................................................................ 20
  4.1 Generate license .............................................................................................................. 20
  4.2 Register license ............................................................................................................... 21

5 Start up ............................................................................................................................... 22
  5.1 Add process networks ................................................................................................. 24

6 Control Panel ...................................................................................................................... 25

7 Settings for camera coordinator ........................................................................................ 26
  7.1 Camera ............................................................................................................................. 26
  7.2 General settings .............................................................................................................. 31

8 Using AKVAconnect Camera Control .............................................................................. 34
  8.1 Choose number of camera views per screen ................................................................. 34
  8.2 Backup ............................................................................................................................ 35
  8.3 Restore ............................................................................................................................ 38

9 Frequently asked questions ............................................................................................... 40
  9.1 Change language ............................................................................................................. 42
  9.2 Relevant symbols ........................................................................................................... 42

Appendix A - Index ............................................................................................................... 43
Appendix B - Deviation form ............................................................................................... 45
Appendix C - Notes ............................................................................................................... 46
Appendix D - Contact information ....................................................................................... 48
1 Safety

Safety for the users of our equipment is of primary focus when AKVA group ASA develop new products and product manuals.

We therefore strongly recommend that everyone that uses the equipment, all that perform any type of repairs, service or other maintenance to the product, and all that work in areas where the product is installed read this entire manual and at most thoroughly, this safety chapter.

This recommendation is based on both personnel safety as well as a desire to keep the products in order and avoid damages if the safety instructions are not followed.

1.1 Safety symbols

These safety symbols are used in this manual:

Information

Show caution, danger of minor personnel injuries and damages to equipment

1.1.1 Other symbols used in this manual

Go to or see page or chapter for further instructions or more information

1.2 Safety instructions

When remote controlling winch from the barge, anyone staying on the cage edge must be aware of this operation.

Read both this AKVAconnect manual as well as user manuals for camera with and without winch before installing and using these.
# 2 Introduction

This user manual is part of the equipment delivered with AKVAconnect Camera Control 2.9. Keep the manual for as long as the feed system is used, and make sure that all changes to the equipment are being noted in the back of this manual.

Thank you for choosing AKVA group ASA as supplier for your camera control system. Do not hesitate contacting us for more information regarding use or maintenance for AKVAconnect or any other AKVA product.

The purpose of this manual is to make the user use AKVAconnect in a safe and economical way. The manual will show how to install the software in the feeding barge computer, how to use the program and it will also answer most day to day questions. If there is anything you do not find the answer to in this manual, please contact us for assistance and help to find a solution to any problems. Contact the AKVA service department, your subcontractor, your local AKCA office or our main office in Norway for assistance and help.
2.1 How to use this manual

This manual describes how to install and use AKVAconnect Camera Control in the best and safest possible way. This entire manual must be read and understood by ALL users prior to use of the software. Site owner and farm manager are responsible for that all personnel and users know and understand the contents of this manual.

Before the first chapter, is a table of contents. The headlines works as links to their respective chapter in the .pdf-file.

Chapter 1 is the most important chapter of this manual, and includes safety precautions ensuring safest possible use.

Chapter 2 contains information on AKVA group and AKVAconnect software, as well as this manual instruction.

Chapter 3 describes the installation procedure. Chapters 4-6 shows how to log in to AKVAconnect Camera Control, how to set up and use the software correctly. Chapter 7 answers frequently asked questions.

Four appendixes are found in the back of the manual: Index, with links to the rest of the manual in the .pdf-document, a deviation form for all deviations with the system, pages for notes about new and extra information are also in the back of the manual and AKVA contact information.

This entire manual must be read and understood, as well as used during installation and use of the AKVAconnect Camera Control software
2.2 About AKVA group

With four main brands, AKVA group ASA is a world leading supplier of technical aquaculture equipment. Since 1980 we have developed and produced fish farming equipment, both for cages at sea and for land based hatcheries. AKVA represents an industrial standard, which is presumed to be the turn key to the future. Research, project management, fast deliveries and customer follow-up have been our focus to ensure that we contribute to a positive development within the agriculture industry. Our goal is to deliver the best possible and most cost efficient equipment in order to keep preserving sustainable farming.

We have a wide variety of products, for example: plastic and steel cages, high pressure washers, net washers, boats, feed barges, feeding systems, cameras, sensor systems, under water lighting, software for fish farming and recycling systems.

AKVA has a continuous development of products, and we continue to improve product safety, functions, range of use and reliability. The purpose of this manual is to enable users to install and use AKVAconnect Camera Control in a safe and economic way.

All of our equipment is pre-installed, tested and delivered from our own production department. This means that our customers have total control over which components you can choose from, grouping collocation, testing and deliveries. Our production staff consists of people with great expertise and engagement for producing the best possible products for you. Having our own production site gives you excellent service in case something should go wrong, or if you are in need of any assistance. Our service staff is available on the telephone or on location in order to assist you if necessary. Safety, both for users and equipment is our main focus when developing products and product manuals.
2.3 About AKVAconnect Camera Control

AKVAconnect is a platform for process control designed to optimize industrial control over processes and activities in fish farms. The system provides total control and surveillance over entire locations, integrating machinery, sensors, cameras and other processes, as well as other equipment desired in any fish farm.

AKVAconnect Camera Control may be used to connect surveillance and control of both small farms as well as multinational aquaculture corporations. It is a modular system compatible with most AKVA equipment, sensors and other technical installations.

In the future, this software will be adjusted to work with new equipment. Wireless coupling allows up to 6 feeding lines connected at the same time. Images from one camera per feeding line may then be shown at the same time. Hard wired cameras may transfer an endless number of camera images and it is possible to view them all at the same time (only restricted by number of screens). Never exit the Piscada server, this has to run in order to use AKVAconnect.

AKVAconnect Camera Control 2.9
Based on Piscada technology
Built February 10th 2015 at 18:05:03 (11966)
Copyright 2008-2015, AKVA group ASA, Piscada AS
All rights reserved.

Computer requirements
Processor: Intel® Core i5
RAM: 4GB
Display card: GeForce 210 1GB RAM, and enough outputs for the desired number of screens
Hard disk: 250 GB
Operating system: Microsoft Windows 7 64-bit
2.3.1 Process network
With AKVAconnect it is possible to use a wireless process network with up to 50km range for surveillance of several sites from one barge or other similar location.

2.3.2 Help for AKVAconnect Camera Control
A help file for AKVAconnect is included, as an addition to the printed user manual. This help file is always available in the AKVAconnect software. To open the help file, click on the ‘Help’ icon inside AKVAconnect’s front page, then click on Piscada manual, and a help pdf-manual, similar to the one you are reading at this moment, will open on the screen.

![Help menu](image)

It is possible to navigate around in the digital manual, and this makes it easy to find needed information and answers to any questions the user may have. Search for words inside the manual by typing Ctrl+F, then type what you are looking for.

In later AKVAconnect versions, it will be possible to connect feeding and surveillance, so that the camera that shows a certain cage will be turned on and video images may be viewed in AKVAconnect each time feeding happens in this cage.
3 Installation

Before installing camera, winch, CAP and other components controlled by AKVAconnect Camera Control, read each product’s respective user manuals to ensure safe operations.

Follow the installation procedure steps below for a safe and controlled installation:

**Step 1**
Firstly, choose language for the installation. Choose between Norwegian, English and Spanish from the roll-down menu. Click ok to approve and move to the next step.

**Step 2**
The simple installation instructions starts:

Next>: Starts the installation wizard

Cancel: Cancels the installation
Step 3
This is where the program’s saving location is decided. It is most common to save it in Program Files. It is important to make sure that there is enough available storage space for the program on the chosen hard disk. The AKVAconnect Camera Control software takes up about 400MB, but video recordings require a lot more space. The user has to make sure that required space is available.

<Back: Takes you to the precious interface
Next>: Takes you to component choice after storage location for AKVAconnect Camera Control is set
Cancel: Cancels the installation
Step 4
Choose all* components if this is the first time AKVAconnect Camera Control is installed to your computer. Choose what you need if you are installing something extra to an existing AKVAconnect program.

*Mobile Service is only chosen if the program is supposed to be used on a mobile client (mobile-phone, iPad, tablet computer etc.), AKVAconnect 2.0 on mobile clients require a different license.

<Back: Takes you back to the previous interface
Next>: When components are chosen, move on to short cut location
Cancel: Cancels the installation
**Step 5**

This is where the AKVAconnect Camera Control short cut is placed. The AKVAconnect Camera Control installation wizard suggests that the short cut is saved in the AKVAconnect Camera Control folder in the Start Menu, it is recommended to follow this suggestion.

![Select Start Menu Folder](image)

<Back: Takes you back to the previous interface

Next>: When desired short cut is set up, move on to choose the desired version

Cancel: Cancels the installation
Step 6

Choose Full version. The license decides access.

<Back: Takes you back to the previous interface

Next>: When desired version is chosen, move on to installation

Cancel: Cancels the installation
Step 7

Now, everything is ready to start up the installation.

<Back: Takes you back to the previous interface

Next>: Starts up the AKVAconnect Camera Control installation on your computer

Cancel: Cancels the installation
Step 8
The green bar shows how far the installation has come. When the gray bar is filled up with green, the installation is done.

Cancel: Cancels the installation
Step 9
Completing the installation is done here, follow these instructions:

☐ Install MySQL:
   - check the box if this is a new installation

☐ Launch installer for AKVAcontrol CCS:
   - check the box if Akva Control 10.0 integration is being used

☐ Install camera drivers:
   - always check this box when installing cameras

☐ Start Piscada-server after installation:
   - always check this box

Finish: Completes the installation
**Step 10**
The computer finishes the installation and these two (or three) interfaces appear in your screen. User/installation contractor has to press any key to move on to the next one.

Press any key to continue.

Press any key to continue.

(This last window will only appear if Mobile service is chosen in step 4.)

Press any key to continue.
Step 11
Type the name of the location under ‘Server name’. Always use small letters/characters consistently, making it easier for yourself, your colleagues and our service personnel.

![Server setup](image)

Step 12
This Piscada Server interface appears when the installation is complete. Make sure that all status indicators are green. If any of the indicators are not green, troubleshooting will be required to find out what is causing the problem/disconnection.

![Piscada Server Interface](image)
4 License

In order to use AKVAconnect Camera Control after installing the software, a valid license has to be registered.

4.1 License request

The Piscada-server will open when the program is installed. The license is generated in the Piscada window like this:

1. Click 'File'
2. Click 'Generate license information'
3. Enter the company name (1)
4. Click Copy MAC to clipboard (2)
5. Close (3)
6 Open a new e-mail, type Ctrl+V (or right click and choose Paste) and send this to AKVA group ASA.

\[Remember to include the company name in this e-mail\]

7 AKVA will then return a license code for you to install.

4.2 Add license

When the license is received from AKVA group ASA, it has to be inserted in the Piscada Server.

1 Click File -> Add license key

2 Enter Your company name and the license key:

3 Click OK and AKVAconnect Camera Control program is ready for use.
5 Start up

1 Log in with user name and password
   Standard user name is **admin** and standard password is **akva**

2 Choose camera overview
   Click on the main menu icon in the bottom left corner of the window and click on Camera to open AKVAconnect Camera Control
This is the image you see on your screen before cameras are added in AKVAconnect Camera Control:

Make sure to have an overview over IP addresses and port numbers before setup (chapter 5) is actuated.
5.1 Add process networks

To add process networks to the user, make sure to have correct license and follow these instructions:

1. Close the AKVAconnect Camera Control application (click on the X with red background in the top right corner of the window)

2. Open the icon: to open the AKVAconnect Camera Control main menu

3. Choose Network from the main menu and the network window opens

4. Click on ‘Add server…’

5. Type the IP address for the server in the Hostname box. Leave the ‘Show advanced settings’ box un-checked, contact a technician if it is necessary to change advanced settings

6. Click OK

7. The server will be added to the list, and the name may be edited by clicking on the name and choose Edit

8. The redundant server function is only used by technician, and only if there are two servers available for redundant

9. Close AKVAconnect and start it up again to open access to the network.
6 Control Panel Menu

- ‘Setup’ takes You to setup for camera coordinator (see more about this function in chapter 6)

- ‘Server’ shows the name of the facility

- ‘Profile’ lets You decide how many video images you want to view at a time (1,2,4 or 6).

- ‘Facility’ on top:
  - choose site in the roll-up menu (only when You have access to more than one site location)

‘Facility’ in bottom:
Choose if quality or bandwidth should be preferred when displaying the video images:
- None: if it does not matter which one is preferred (in case the bandwidth is good enough, that it will not matter anyway)
- Quality: if video viewing is a top priority (using as much bandwidth as necessary)
- Bandwidth: if bandwidth capacity controls the quality (if other network tasks are preferred and video image quality is varied)
- Mobile: only if images shall be shown on a mobile device
- Balanced: if the quality may vary with available bandwidth

To hide the control panel (the bottom tool-bar), use the command Ctrl+H. Only the images will show on the screen.
To show the control panel again, type Ctrl+H again.
7 Settings for camera coordinator

Open Camera Coordinator Setup by clicking on the ‘Setup...’-button in the control panel menu

7.1 Camera

Make sure that overview over IP addresses and port numbers available before starting the set up process

Click desired channel (1) and choose Add (2):

SmartBox and SmartCap are analogue and wireless, and will be added under “Kanal” (channel).

AxisIP (3) is digital, and it is possible to add them under “Kanal” or AxisIP camera.

Camera tracker (4) is not included in this version of AKVAconnect Camera Control. iCap (5) is only for technicians.
7.1.1 Basic

This is where all basic settings about the cameras are registered:

**ID**
Fill in name and description for the channel

**Camera**
Fill in the IP address of the camera
*Alternative address is only filled in if external networks are used. If external networks are not used, type the camera IP address here as well.*

Stream (compressing type): Normally H264(Axis)

Type:
SmartBox / SmartCAP / iCap (internal use) / Axis IP

SmartBox and SmartCAP are analogue and wireless, and have to be added under “Channel”.
iCap and Axis IP are digital and you can choose to either add them under “Channel” or “Axis IP Camera”.

☐ *Use alternative encoder-path - only for internal use.*

**User name/password** Fill in only if these parameters are registered for this camera.

**PELCO communication settings**
PELCO ID - The camera’s ID-number
PELCO IP - IP for the video server connected to the command radio

*Alternative address - only used with external networks.*
### 7.1.2 Advanced

Advanced settings are registered if the camera should have other settings than the ones registered in the general settings section.

*Index decides the camera order in the right click menu inside the video image window*

### Pan speed, Tilt speed and Zoom speed

Default is recommended set to 60% of maximum value. The speed concerns only when using keyboard and AKVAconnect Camera Control arrow keys. When using joystick, the movement will decide the speed.

### Turn camera off after streaming is finished

Use if it is desired that the camera is turned off when it is not being used in order to save power.
7.1.3 Test connection

After registering all basic and advanced settings, make sure that everything is in order by clicking the “Test connection”-button in the bottom right corner of the Add Camera window.

If everything is ok, all status indicators should be green:

This image is only an illustration to show how the indicators will look when all connections are ok and the camera control is ready for use. All ID, Camera and PELCO information must be filled in in order to achieve all green indicators.
7.1.4 Screen setup
If more than one screen is being used in the camera control surveillance, screen numbering must be set up. This is done by entering the Setup-menu and clicking the "Screen setup"-button in the window for Camera Coordinator Setup.

![Screen setup button]

All screens connected to the computer will become grey with a number in the centre. Click on the numbers to set the screen order and close when done.

![Screen setup screenshot with numbers]

7.1.5 Set as start up view
Click the "Set as start up view"-button (below the "Screen setup..."-button) and AKVAconnect Camera Control will open automatically as the AKVAconnect software is opened.

![Set as startup view button]
7.2 General settings

Settings registered under General settings are for all connected cameras that do not have any registered advanced settings.

Advanced settings are registered under Cameras in the Camera Coordinator Setup window, and will overrule all general settings for cameras.

User name and Password are set only if it applies to all cameras.

Open camera view on log in opens Camera Control and shows chosen camera views automatically when starting up the AKVAconnect software.

Turn off camera on start/stop when changing camera, all cameras that are not being used, will be turned off to save power.

Stretch all cameras to max size camera images will fill the entire screen.

Turn off camera after ____ minute(s) idle time Saving power after desired amount of minutes.

Winch settings
Use winch duty cycle
- On time and off time is decided from reel size
- Standard On time is 1000ms and standard Off time is 2000ms
7.2.1 Controller (joystick or similar)
To add controllers, click the “Controls”-button in the Camera Coordinator Setup -> General settings window

![Controller setup](image)

The controller name will appear automatically in the Device field.

Functions for the different buttons may be added by clicking Assign by the desired function and thereafter clicking the device button that should control the function.

**Example:**
The A button on the joystick is going to control the surface camera. Click the Assign button belonging to the Surface function, and click the A button on the joystick, and the assignment is completed. Every time the A-button is clicked on, the surface camera will appear in the screen.
### 7.2.2 Other functions

“Show log” and “Send start/stop commands ___times” in the Camera Coordinator Setup - > General settings window are commands that should only be used by technicians during troubleshooting.
8 Using AKVAconnect Camera Control

8.1 Choose number of camera views per screen

When all cameras are added and all tests are ok, it will be possible to add up to 6 camera views per screen. Number of views are chosen from the coloured numbers in the bottom left corner of the Camera Control window:

4 views will appear like this:

If several screens are being used from the same Camera Control software, right click inside one of the views and choose "Send clone to" and choose desired screen number. A copy of the original view will appear on the chosen screen. To close the clone, click the X in the top right corner of the screen.

To vary which camera to view, click inside the desired camera view and the frame will change from white to yellow (see "Merd 10" in the image above). When the camera view is ‘marked’, it’s position may be controlled by using the arrow keys or an assigned joystick. The Tab-key shows next image, Shift+Tab goes back to the previous image. The video image may cover the entire screen by double clicking desired view. To go back to normal view, click the Esc-key.
8.2 Backup

Backup copies must be saved after every change to the system is done. Follow these instructions to get a safe backup:

1. Exit the Camera Control application by clicking the X in the blue frame of the Camera view.

2. Click on the main menu icon in the bottom left corner.

3. Choose ‘System’ from ‘System setup’ in the main menu.

4. Choose ‘Backup and restore’ from the top of the System menu.
5 Use suggested backup storage location, or change the location by clicking on ‘Change location…’

6 Leave all boxes be un-checked

7 Click on the Backup-button

8 Change backup name or used suggested name -> OK

9 When the safety Backup is finished, this window pops up:

Save the backup to an external hard disk or an USB memory stick, so it may be restored even if the software or the computer should break down.
8.2.1 Scheduled backups  
Follow these instructions to register Scheduled backups:

1. Open the Backup and restore menu as explained in steps 1-4 in chapter 7.2

2. Click Add... and this box appears:

3. Register desired time interval and which data to include in the scheduled backup

4. Click OK and the scheduled backup will appear under Backup schedules. It is possible to run several scheduled backups at the same time.
8.3 Restore

If the configuration breaks down or AKVAconnect is being moved to a new computer (remember new license for new computer!), the Restore from backup is necessary. Use the backup from the external hard disk or USB memory stick where the backup was stored during the backup process in the previous chapter.

1. Follow the steps 1 to 4 from chapter 7.2 to find the Restore section
2. Choose Restore in the top menu
3. Click on the last backup (check date!) to choose it
4. Click the Restore button in the bottom right corner of the window
5 This window appears:

![Import Window](image)

6 Leave both boxes un-checked (un-check the Clear database before import-box) and click the 'Start import'-button

7 Piscada (the server) will be shut down, and turned back on automatically, and this message appears when the import is finished (the import may take a little while):

![Import Finished Window](image)

8 Click OK and close the “Backup and restore” window by clicking the X in the top right corner of the window. Start up the AKVAconnect Camera Control application as normal (Main menu icon -> Camera) and start using the software.
9 Frequently asked questions

1. If this message appears in the AKVAconnect Camera Control software, the license is expired, and a new license must be requested from Your AKVAconnect supplier.

![SERVER LICENSE NOT VALID. Please contact your supplier.](image)

2. Make sure that the Piscada server is running at all times when using the AKVAconnect Camera Control. If this is shut down by any reason, AKVAconnect will not work. It is possible to see the Piscada server status in the main menu, next to Network:

![Network: Server OK](image)

This will also be indicated in the bottom line of the AKVAconnect main page (when the AKVAconnect Camera Control is closed):

![PRIMARY SERVER IS STOPPED](image)

The Piscada window will close when the Piscada server is shut down. To start up the server, follow the instructions in the next page.
To close Piscada, click File -> Exit.

Do not close Piscada when using AKVAConnect Camera Control, this will shut down the control system. If Piscada has been closed, for any reason, it may be re-opened like this:

a  Open All programs from the Windows start-button  
b  Open the AKVAConnect folder  
c  Open the Server folder  
d  Click on Piscada Server  
e  The Piscada Server will open.

_Piscada will open automatically when AKVAConnect is opened, so it will not be necessary to open unless it has been closed or if the system has crashed._

3 If parts of the text is hidden in AKVAConnect, it is necessary to change the computer screen settings:

a  Open the computer Control Panel  
b  Choose Screen/Change appearance  
c  Set the size to 100% (from 125% or 150%)  
d  Click Use  
e  Restart the computer.

Should look like this: ![Valid License]

Should not look like this: ![Invalid License]
9.1 Change language

To change the language in AKVAconnect after installation, follow these instructions:

1. Click on the Windows start button
2. Open All Programs
3. Open the AKVAconnect folder
4. Right click on AKVAconnect
5. Choose properties
6. Choose the ‘Short cuts’ tab
7. For English:
   - Change the last two letters in the text in ‘Target’ to -EN
   For Norwegian:
   - No text after the “-symbol
8. Click Use, then OK and the language has changed.

9.2 Relevant symbols

AKVAconnect main menu icon
- in the lower left corner of the AKVAconnect platform

The Windows start button

Piscada

AKVAconnect
Appendix A - Index

A
advanced settings 24, 28, 29, 31
arrow keys 28, 34
AxisIP 26, 27

B
balanced 25
bandwidth 25
basic settings 27

C
camera 4, 8-10, 16, 22, 23, 25-32, 34, 39
camera coordinator 25, 26, 30-33
camera drivers 17
change location 38
command radio 27

E
Esc-key 34

F
facility 25
frame 34, 35

H
help 5, 9

I
ID 26, 29
index 28
installation procedure 10
instructions 4, 10, 17, 34, 35, 42
integration 8, 17
IP address 23, 24, 26, 27

J
joystick 28, 32, 34

K
keyboard 28

L
language 10, 42
license 12, 14, 24, 38, 40
log in 22, 31

M
main menu 35, 40
main menu icon 22, 24, 35, 39, 42
memory stick 36, 38
mobile device 25
mobile service 12, 18

O
off time 31
on time 31
open camera view 31

P
pan speed 28
password 22, 27, 31
PELCO 27, 29
port numbers 23, 26
process network 9, 24
profile 25

Q
quality 25

R
redundant server 24
remote control 4

S
save power 28, 31
scheduled backup 37
screen order 30
screen setup 30
send clone to 34
server 8, 17, 19-21, 24, 25, 27, 40, 41
setup 23, 25, 26, 30
shut down 39-41
site locations 25
SmartBox and SmartCap 26, 27
status indicators 19, 29
storage 11, 36
stream 27, 28
surveillance 8, 9, 30
symbol 4, 42

t
Tab-key 34
test connection 29
tilt speed 28
time interval 37
turn off camera 31

u
user name 22, 27, 31

w
winch 4, 10, 31
winch duty cycle 31

z
zoom speed 28
# Appendix B - Deviation form

Make copies of this deviation registration form.

<table>
<thead>
<tr>
<th>Deviation control</th>
<th>No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit:</td>
<td>Producer:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deviation description:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Follow up proposition:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date and signature, declarer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Follow up directed:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Status:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>New action for deviation no.:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date and signature, follow up:</th>
</tr>
</thead>
</table>
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