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VIRTUALIZE THE EXPERT

DIGITAL TRANSFORMATION IN FIELD INSPECTIONS

Streamlining Processes through Remote Assistance and
Standardized Digital Workflows



White Paper

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KEY HIGHLIGHTS

- ▶ Remote assistance software and digital workflows revolutionize inspections, enabling remote collaboration and streamlining operations.
- ▶ Remote inspections offer speed, accuracy, cost-effectiveness, and safety benefits.
- ▶ Remote assistance software guides on-site personnel using live video feeds, providing real-time instructions and analysis.
- ▶ Digital workflows transfer inspection data, documentation, and reports, eliminating manual paperwork.
- ▶ Steps for a standard remote inspection: prepare, initiate session, use collaboration tools, document findings, address concerns.
- ▶ Advanced remote inspection uses digital workflows for autonomous data gathering, standardization, efficiency, and collaboration.

INTRODUCTION

This whitepaper explores the transformative potential of remote assistance software and digital workflows in the realm of inspections. Delve into the innovative use of technology to optimize the inspection process, enabling remote collaboration and streamlining operations across diverse industries.

Traditional inspections often require on-site presence, entailing significant costs, logistical challenges, and potential safety risks. However, with recent advancements in remote assistance software, seamless wireless connectivity and digital workflows, organizations can now conduct inspections remotely, overcoming geographical barriers and enhancing operational efficiency. By leveraging these tools, inspections can be executed with greater speed, accuracy, and cost-effectiveness, revolutionizing the way inspections are performed.

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By leveraging these tools, inspections can be executed with greater speed, accuracy, and cost-effectiveness, revolutionizing the way inspections are performed.

In this whitepaper, we will examine the key elements of remote inspections, focusing on the utilization of remote assistance software and standardized digital workflows as crucial components of this modern approach. We will explore the seamless integration of visual communication tools, augmented reality (AR) capabilities, and real-time collaboration platforms, all aimed at bridging the gap between on-site and remote inspection activities.

By implementing remote assistance software, inspectors can guide on-site personnel using live video feeds, providing real-time instructions, annotations, and visual cues. This interactive and immersive experience allows remote experts to remotely assess and analyze assets, systems, or facilities without physically being present. Moreover, digital workflows enable the seamless transfer of inspection data, documentation, and reports, eliminating the need for manual paperwork and reducing administrative burdens.

Throughout the following sections, we will deep dive into the advantages, considerations, and best practices associated with remote inspections. We will showcase case studies highlighting successful implementations of remote assistance software and digital workflows across various industries, such as manufacturing, construction, energy, and healthcare. By exploring these real-world examples, readers will gain valuable insights into the practical application and benefits of this transformative approach.

It is important to note that this whitepaper focuses on the broader concept of remote inspections and the technologies that enable them, without specific hardware references. By adopting a neutral standpoint, we aim to provide an unbiased perspective, allowing readers to evaluate and select the most suitable solutions based on their unique requirements and industry contexts.

Join us on this enlightening journey as we uncover the potential of remote assistance software and digital workflows in revolutionizing inspections. Together, we will explore the realm of remote inspections, empowering organizations to achieve greater efficiency, accessibility, and effectiveness in their inspection processes. Let us embark on this transformative exploration, as we embrace the future of inspections through remote collaboration and digital empowerment.



STANDARD REMOTE INSPECTION

Seamlessly Connecting Experts in Office to the Field Inspectors

The standard remote inspection includes, as a minimum, live-stream video and audio between the supplier's worksite and the client audience. At the supplier's worksite, a supplier QC engineer or an agency inspector operates the video capture equipment. The client audience may consist of engineers from your company, EPC Contractors, or another agency inspector.

The results of testing and inspection witnessed in this manner will be captured in inspection certificates and reports, following your company's usual procedures. Suppliers working with your company should always:

- ▶ Engage in discussions and seek approval from the client audience before executing remote inspections.
- ▶ Conduct functional tests of the remote inspection equipment, if necessary, in coordination with the client audience prior to the actual inspection.
- ▶ Ensure the inspection runs efficiently by listing the activities in an agreed script or a modified inspection procedure specifically designed for remote inspections.

Standard remote inspection allows for the witnessing of selected elements of the Inspection and Test Plan (ITP). The performance of the test is always carried out by the supplier of the equipment or module under fabrication. Additionally, it is also possible to witness some of the tests for Design Validation Testing. These activities may include:

- ▶ Pre-Inspection Meeting (PIM) with a workshop tour
- ▶ In-progress inspections, such as weld preparation/fit-up
- ▶ Performance inspections and testing, such as pressure testing and non-destructive testing (NDT)
- ▶ Final inspection and resolution of punch list items

By following these guidelines and leveraging standard remote inspection, your company can effectively conduct inspections and ensure the quality and compliance of the equipment or modules being fabricated.

In the next section, we will walk you through the process of conducting a standard remote inspection, ensuring that you are equipped with the necessary knowledge and understanding to embrace this user-friendly approach. Remote inspections offer a convenient and efficient alternative to traditional on-site inspections, enabling you to save time, reduce costs, and improve safety. We will guide you step-by-step, highlighting key considerations and providing practical tips to ensure a successful remote inspection experience.

STEP1 | Preparation

Before embarking on a remote inspection, adequate preparation is essential to ensure a smooth and effective process. Here are some key steps to follow:

- 1. Identify the inspection scope:** Clearly define the objectives, areas, or assets to be inspected remotely. This will help you determine the necessary tools and resources required for the inspection.
- 2. Schedule a suitable time:** Coordinate with all parties involved to find a mutually convenient time for the remote inspection. Consider time zone differences, availability of personnel, and any additional local circumstances such as travel time and weather conditions.
- 3. Communicate with on-site personnel:** Establish effective communication channels with on-site personnel who will assist in carrying out the inspection. Provide clear instructions on the tasks, areas to focus on, and any specific requirements.
- 4. Verify technical requirements:** Ensure that the remote assistance software and digital tools are properly installed and functioning on both ends. Test the audio and video quality, internet connectivity, and any other technical aspects to avoid potential disruptions during the inspection.

STEP2 | Conducting the Remote Inspection

Once the preparation stage is complete, it's time to move forward with the remote inspection itself. Follow these steps to conduct a successful remote inspection:

- 1. Initiate the remote assistance session:** Connect with the on-site personnel through the chosen remote assistance software. Ensure that both parties are able to establish a secure and stable connection.
- 2. Establish visual communication:** Use the live video feed to visually assess the area or asset being inspected. Request on-site personnel to provide a comprehensive view of the surroundings, focusing on specific areas of interest as directed.
- 3. Utilize remote collaboration tools:** Take advantage of the features offered by the remote assistance software. This may include screen sharing, annotations, or augmented reality capabilities. Guide on-site personnel to zoom in, point out specific details, or perform actions as needed.
- 4. Provide clear instructions:** Communicate instructions and guidance in a clear and concise manner. Use non-technical language and avoid industry jargon to ensure easy understanding by on-site personnel. Break down complex tasks into simple steps, and verify their comprehension before moving on.
- 5. Document findings:** Request on-site personnel to capture photos, videos, or measurements as required. Ensure that the documentation is clear and easily accessible. This will aid in generating accurate reports and maintaining a comprehensive record of the inspection.
- 6. Address questions and concerns:** Encourage on-site personnel to ask questions or seek clarification whenever needed. Maintain open and responsive communication throughout the inspection process.

STEP3 | Follow-Up and Reporting

After completing the remote inspection, it is crucial to follow up and provide a comprehensive report. Consider the following steps:

- 1. Review and analyze the collected data:** Evaluate the inspection findings, cross-reference them with relevant standards or requirements, and identify any areas that require attention or further action.
- 2. Generate a detailed inspection report:** Compile all the necessary information, including observations, recommendations, and any identified issues or non-compliance. Present the report in a clear and organized manner, using plain language that is easily understood by the intended audience.
- 3. Communicate findings and recommendations:** Share the inspection report with the appropriate stakeholders, ensuring that it reaches the relevant parties responsible for addressing any identified issues. Clearly convey the significance of the findings and provide actionable recommendations for improvement or corrective measures.

By following these step-by-step guidelines for conducting a standard remote inspection, you can effectively leverage remote assistance software and digital workflows to streamline your inspection processes. Embrace this user-friendly approach, enhance your efficiency, and contribute to a safer and more productive work environment.

Proven use-case

A client' asset team has used Remote Inspection to complete inspection of pressure vessels fabricated in China. Remote Assistance was used in this project to bring together **internal QC, external inspection SME and the supplier**. Selected items in the Inspection & Test Plan ITP (e.g. Hydrotest) were conducted using the system and subsequent wet signature sign off by witness is on conventional ITP on paper.



Tangible cost saving

2 FTE travel:	~6,000 USD
2 FTE non-productive time:	~2,500 USD
Reduced time to project completion est.:	~2,500 USD



Non-tangible savings

Less time in operational environment (Safety)
CO2 reduction (ESG)
Additional internal staff were able to join the virtual call for training purposes and leadership awareness.

11,000 USD SAVED FOR SINGLE EVENT!



Reduce
Travel



Decrease
non-productive
time



Global
collaboration



Speed up
project
completion

ADVANCED REMOTE INSPECTION:

Remote Inspection with Standardised Digital Workflows For Field Workers

Advanced remote inspection, at its core, is driven by the use of digital workflows. These workflows enable the seamless gathering of data by relevant third parties, alleviating the burden on inspectors while ensuring standardized data collection and inspection reports. By adopting pre-created workflows, organizations can streamline the inspection process, minimize variations in analysis and output, and enhance overall efficiency. This section will explore how digital workflows play a central role in advanced remote inspections, enabling autonomous data gathering and standardization of inspection procedures.

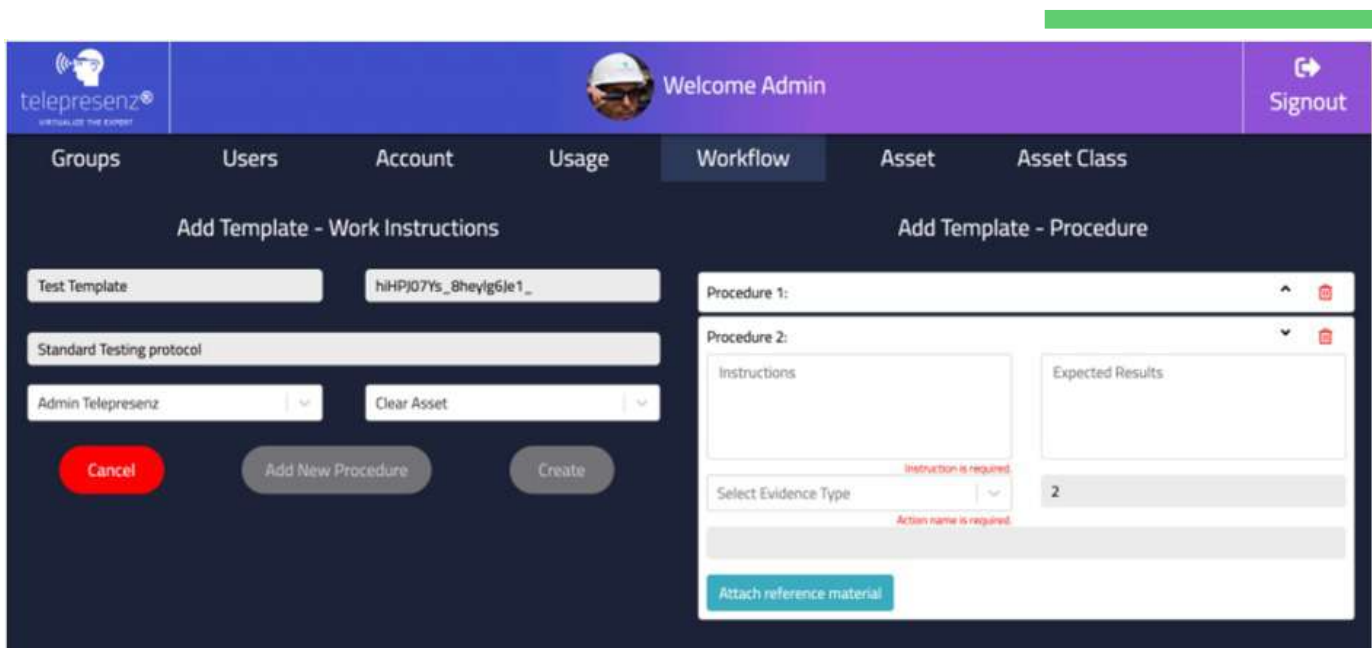


Figure 2 - Easily create ITP step instructions

The Role of Digital Workflows in Advanced Remote Inspection:

Digital workflows serve as the backbone of advanced remote inspection, facilitating the smooth flow of information and tasks throughout the inspection process. By employing these workflows, inspectors can benefit from the autonomous collection of data by third-party entities, relieving them of the time-consuming task of manually gathering information. This feature is particularly advantageous in complex or large-scale inspections where multiple parties are involved.

1 Autonomous Data Gathering

With digital workflows, relevant third parties, such as specialized technicians or remote operators, can execute pre-determined steps in the inspection process autonomously. This means that data collection can be efficiently carried out by experts in specific areas, ensuring accurate and reliable information is captured. Inspectors can focus on analyzing the gathered data and making informed decisions, rather than being burdened by the logistical aspects of data collection.

2 Standardization of Data Gathering and Inspection Reports

One of the key advantages of employing digital workflows in advanced remote inspection is the standardization it brings to the process. Pre-created workflows establish a clear and consistent framework for data gathering and inspection procedures, minimizing differences in analysis and output between different inspection subject matter experts (SMEs). This standardization ensures that inspections are conducted in a uniform manner, regardless of the inspector involved, leading to greater reliability and comparability of inspection results.

3 Enhanced Efficiency and Time Savings

By leveraging digital workflows, advanced remote inspections enable inspectors to focus on the critical aspects of analysis, decision-making, and problem-solving. The streamlined and automated data collection process reduces manual effort, eliminates redundant tasks, and ultimately accelerates the inspection timeline. Inspectors can allocate their time more efficiently, maximizing productivity and allowing for more thorough evaluations within a given timeframe.

4 Improved Collaboration and Knowledge Sharing

Digital workflows facilitate collaboration between various stakeholders involved in the inspection process. Inspection data and reports can be easily shared and accessed by team members, enabling real-time collaboration and knowledge sharing. This collaborative environment promotes consistent interpretations, fosters collective expertise, and enhances the overall quality of inspection outcomes.



Figure 3 - Anyone can execute steps with the right guidance

By embracing digital workflows, organizations can harness the power of advanced remote inspection to achieve greater efficiency, standardization, and collaboration. While the digitization of QC/QA inspections through digital workflows holds great potential, it is essential to recognize that complete digital transformation is unlikely to fully replace the Inspection and Test Plan (ITP) as we know it. The need to maintain personal relationships with suppliers and the requirement for wet signatures in audits are just a few reasons why certain aspects of the ITP will continue to rely on traditional methods. However, this should not discourage us from embracing digital workflows. By gradually integrating digital tools into the ITP, we can significantly unburden staff and enhance efficiency. Through the automation of data gathering, streamlined reporting processes, and real-time collaboration enabled by remote assistance technologies, we can leverage the power of digitalization to optimize our workflows without sacrificing the human touch.

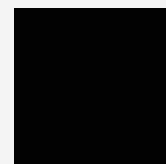


Watch Video

[CLICK HERE](#)

OR

Scan QR Code



Proven use-case

A client' Assessment team used Digital Workflows to document marine terminal jetty inspection. Inspection items were following a flow of twenty-seven (27) inspection steps, such as jetty security access, visitor safety notices, life-saving equipment on jetty, mooring load monitoring systems etc. Various photos and videos were taken as per planned workflow as evidences for the successful completion of the inspection. The inspection took about two hours, and it was completed effectively and efficiently. **Leadership and SMEs at different locations participated** in this inspection as part of the assurance process.



Tangible cost saving

1 inspector' travel:	~2,500 USD
2 On-site FTE non-productive time:	~1,500 USD
Automated audit log report:	~1,200 USD



Non-tangible savings

Standardized audit report across sites. (Analytics)
Less time in operational environment (Safety)
CO2 reduction (ESG)
Additional staff were able to join the virtual call for training purposes and leadership awareness. (21,500 USD travel was saved as this was originally planned as a group site visit)

5,250 USD SAVED FOR SINGLE EVENT!



Reduce
Travel



Decrease
non-productive
time



Global
collaboration



Automated
reporting

This strategic approach allows us to strike the right balance between embracing technological advancements and preserving the essential elements of quality control and quality assurance inspections.

ABOUT TELEPRESENZ INC.

With over 25 years of delivering software solutions to enterprises and over 4 years of proven experience in connected worker solutions, the Telepresenz team is helping industrial organizations and medical institutions of all sizes accelerate their digital transformation. Our market-leading collaboration platform has been deployed in several countries around the world, addressing a wide range of applications like remote diagnostics, inspection, and workflow management. Our customers have increased productivity, reduced resolution time, and increased uptime with our industry-leading remote collaboration platform. We are happy to answer any questions and get you familiar with Telepresenz.



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