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Animation Visualization of a Mobile Radiation Measurement System for Nuclear Waste Containers Using Autodesk Maya

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Abstract

The article presents the development of an animated multimedia presentation for a prototype of a measuring system designed for radiation monitoring of transport and storage containers for radioactive waste. The 3D model of the container was created using the Autodesk Maya software package, utilizing polygonal geometry for modeling. Maya's FX subsystem was employed to simulate both radiation and the movement of the ropes. Post-production was carried out using the CapCut video editor. The final animation will be used for public relations purposes by IPM and to support the next phase of the joint project: "Development and testing of methods for the non-invasive analysis of the inventory status of transport and storage containers during extended interim storage".

Keywords

3D modeling; 3D visualization; Nuclear waste storage; Mobile measurement system; Technical animation.

Introduction

Monitoring radiation from nuclear waste containers is both technically challenging and socially sensitive. Transparent communication about the functionality and safety of such systems is essential for public acceptance and stakeholder engagement. Especially in the nuclear sector — where direct demonstration is restricted — virtual visualizations offer a valuable alternative for illustrating complex processes and interactions.

Despite the increasing availability of advanced 3D modeling tools (Autodesk, 2025a; Autodesk, 2025b; Autodesk, 2025e; Blender Foundation, 2025; Maxon, 2025), a research gap persists in using these technologies specifically for public and interdisciplinary communication of radiation monitoring systems. Most existing studies focus on technical validation rather than how such systems can be visualized in a way that is both scientifically accurate and accessible to non-experts.

This article addresses this gap by presenting an animated multimedia visualization of a conceptual mobile radiation measurement system for the Castor 440/84 container (EWN, 2020; Gartz et al., 1998). The primary aim is to create an engaging, technically grounded animation that supports public outreach, educational purposes, and internal research communication (Guo et al., 2023). The system builds on concepts such as the DCS Monitor II (aseeliger, 2024) and introduces a rope-guided platform for improved measurement access (Kratzsch & Reinicke, 2024; Stephan et al., 2021).

Autodesk Maya (Autodesk, 2025e) was used to model, animate, and simulate mechanical motion and radiation emissions. Maya's FX tools (nParticles, nCloth) and the CapCut video editor enabled the production of a high-quality, coherent visual presentation.

This article's motivation is to visualize a prototype to demonstrate functionality, support visual storytelling, and demonstrate design innovation and operational improvements in a way that static documents cannot. This article demonstrates how advanced 3D modeling and animation tools (such as Autodesk Maya) can be used for engineering simulations. Most studies in this area focus on technical performance, with less attention paid to how these systems are presented to a non-technical audience.

This article is structured as follows: Section 1 presents related research and technical documentation. Section 2 explains the modeling and animation methodology. Section 3 discusses results and visual strategies. Section 4 provides a critical assessment, followed by a conclusion and outlook on future research in visualization for radiation monitoring.

1 Literature Review

In recent years, virtual visualization has gained increasing importance in technical communication, education, and system design. Previous studies have emphasized the role of 3D modeling and animation in conveying complex engineering processes across disciplines such as mechanical engineering, architecture, and energy systems (Rao, 2025; Jasmin et al., 2024). For example, Goldfinger et al. (2024) showed how dynamic visualizations can enhance the comprehension of radiation behavior in containment systems. Similarly, Li et al. (2022) demonstrated the effectiveness of using nParticles in Maya to represent invisible physical phenomena, such as radiation or fluid dispersion, in educational simulations.

Despite these advances, there remains a lack of research that connects detailed modeling of nuclear waste containers—like the Castor 440/84—with accessible visual communication strategies for public and stakeholder engagement. Most existing studies focus either on the mechanical and thermal analysis of such containers (Gartz et al., 1998; EWN, 2020) or on the technical design of radiation measurement systems (Kratzsch & Reinicke, 2024), without integrating these systems into an animated visual narrative that illustrates their operation and benefit. Furthermore, only limited attention has been paid to the role of animation as a tool for bridge the gap between expert knowledge and public understanding.

This article aims to address that gap. While drawing on earlier technical work on mobile radiation monitoring systems (Stephan et al., 2021; Kratzsch & Reinicke, 2024), the authors propos an interdisciplinary approach that uses Autodesk Maya for 3D visualization and CapCut for post-production. This approach combines visual storytelling with engineering precision, extending previous studies' communicative scope.

Key terms used throughout this article include:

- **3D modeling** – creating three-dimensional digital representations of physical objects or systems.

- **Virtual visualization** – the computer-based depiction of systems and processes to improve understanding and communication.
- **Radiation monitoring system** – designed to measure and analyze radioactive emissions from a given source.
- **nParticles (Maya)** – a simulation tool used to create and animate particles that behave like natural or abstract phenomena.

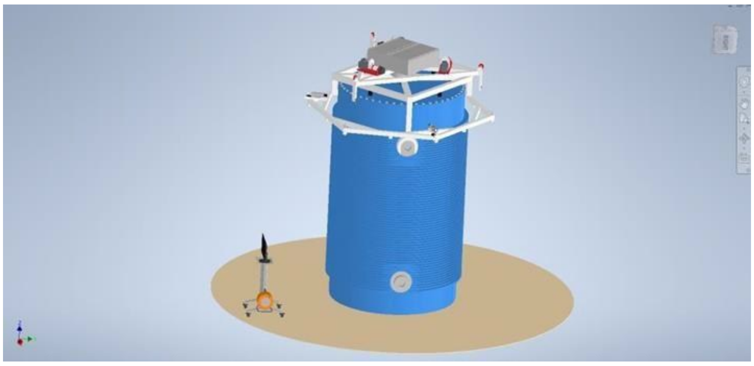
While most literature agrees on the utility of 3D tools in design and simulation, perspectives vary on their role in stakeholder communication. Some argue that technical precision is paramount (Autodesk, 2025d), whereas others advocate for visual simplicity to improve accessibility (Yang, 2024). This balanced article demonstrates how animation can serve both purposes by conveying technical accuracy while remaining visually intuitive.

Project understanding began with the analysis of technical documentation, including dimensional drawings and cross-sections. The Castor 440/84 container is well-documented, with numerous reference images showing its design and storage environment. These resources enabled the creation of a realistic digital representation of the container.

Source: (Kratzsch & Reinicke, 2024)

Fig. 1: *Castor 440/84 and existing mobile radiation measurement system*

The mobile measurement system is a novel concept that has yet to be developed (Figure 1). A 3D model was created for the container and the measurement system to support visualization, enabling a detailed representation of all key components.



Source: (Kratzsch & Reinicke, 2024)

Fig. 2: *3D Model of Castor 440/84 and the conceptual prototype of a mobile radiation measurement system in Autodesk Inventor*

The existing measurement system was analyzed to understand the operational context of the new design (see Figure 2). It rotates around the container and uses sensors to measure gamma and neutron radiation from its surface. This served as the basis for identifying the innovations and potential advantages of the proposed concept in a future research project. Unlike its predecessor, the new system is mounted above the container. Its sensors are positioned on a rope-guided platform, which enables multi-angle measurements (see Figure 2). This approach enhances mobility, reduces required floor space, and may improve measurement accuracy.

2 Methodology

2.1 Software

Various 3D software tools are used across numerous industries, including film, animation, gaming, architecture, mechanical engineering, industrial design, advertising, and medical visualization. Prominent examples include Autodesk Maya (Autodesk, 2025e), 3DS Max (Autodesk, 2025a), Unity (Unity, 2025), Autodesk Inventor (Autodesk, 2025b), Cascadeur (Nekki, 2025), and Houdini (SideFX, 2025), among others.

Due to its flexibility and widespread use in industry and academia, Autodesk Maya was used for 3D modeling, animation, and simulation (Rao, 2025). For dimensional accuracy, a reference model from Autodesk Inventor was imported. A scaling factor of 142 mm in Inventor, equaling 1 unit (1 meter) in Maya, ensured correct proportions.

2.2 Container Modeling

The 3D modeling of the container was divided into two main components: the outer structure and the interior assembly. The modeling was performed using polygonal primitives, primarily cylinders and cubes, in combination with Mesh editing tools such as Booleans, Combine, and Extrude.

The outer structure of the container includes the main body, cooling fins, transport brackets, and protective covers. A single fin was created from a cylinder and then duplicated uniformly along the y-axis using the “Edit” → “Duplicate special function” To model the approximately 80 cooling fins along the container wall. The Bevel tool was applied to smooth the edges of the fins and transport brackets, while Extrude was used to give depth to the surfaces.

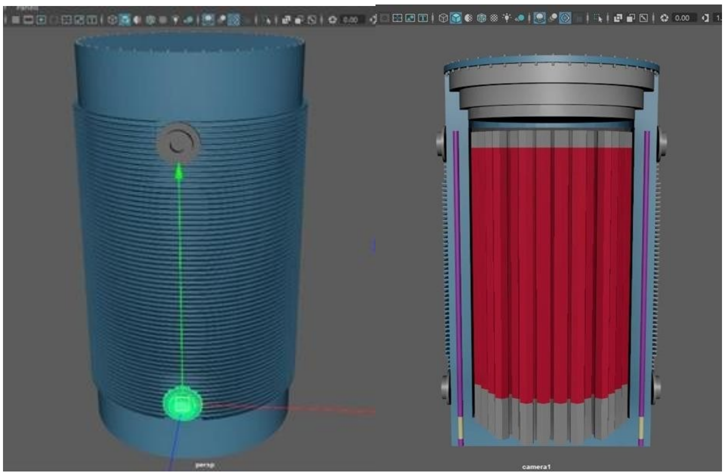


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Fig. 3: *Exterior and interior of a Castor 440/84 in Autodesk Maya*

The interior section consists of a hexagonal frame holding 84 fuel assembly positions, surrounded by 76 steel tubes arranged concentrically around the rim. Each assembly position contains a cluster of smaller hexagons, each with a red circular core representing nuclear fuel; the central hexagon remains empty (EWN, 2020; Gartz et al., 1998; GNS, 2025).

Internal geometry modeling also relied on polygonal primitives and Booleans, Combine, and Duplicate Special to efficiently replicate structures. Each hexagonal element comprises three segments: a top and bottom section (colored gray) and a central core (colored red) to visualize the nuclear material's presence, compared with Figure 3.

2.3 Modeling of the Mobile Measurement System

The mobile measurement system is mounted above the container. It consists of three platforms (Kratzsch & Reinicke, 2024), a rope-based movement system, multiple sensors for detecting radioactive emissions, and control electronics. The components were modeled using a combination of Polygon Primitives and NURBS Primitives in Autodesk Maya.

The modeling process began with the three interconnected platforms:

- The first **quadrangular** platform is fixed to the container via transport brackets. It features a rotating wheel that connects it to the second platform.
- The second platform, which is **triangular**, supports three motors used to control the rope's movement. These motors operate in sync with the electronic control unit.
- The third platform is **hexagonal** and serves as the primary measurement unit. It has three radiation sensors, and three circular anchors attached to the ropes. This platform can move and rotate around the container.

The "Boolean," "Extrude," and "Combine" functions were used to model complex elements such as the rotating wheel and the mechanical connectors between the platforms.

A specific modeling challenge was the representation of the rope system. A custom solution was developed using Sweep Mesh to extrude a curve into a cylindrical shape to visualize the ropes. Two separate segments represented each rope:

1. The segment from the motor to the auxiliary spinning wheel remains static but is animated to simulate motion.
2. The segment from the auxiliary spinning wheel to the hexagonal platform is animated to depict actual movement during the measuring process.

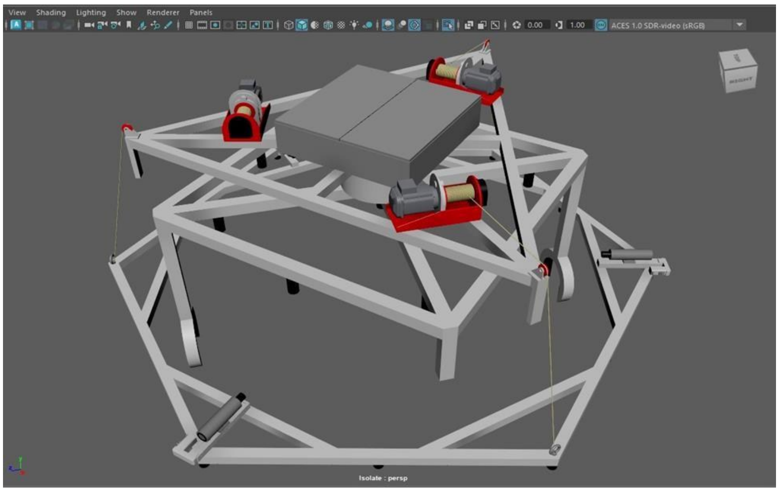

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Fig. 4: *The conceptual prototype of a mobile radiation measurement system*

This modeling approach allowed for a clear and realistic representation of both the mechanical structure and the movement logic of the mobile measuring system. The result can be seen in Figure 4.

2.4 Simulation of Radiation and Rope Dynamics

The FX module in Autodesk Maya was used to simulate the visual effect of radioactive emissions. The emission was represented using nParticles, configured to appear as small spherical particles. These particles were emitted over time to mimic the dispersion of ionizing radiation from the container surface (Academic Phoenix Plus, 2019).

When animating the rope, nCloth and nConstraint are used (MH Tutorials, 2015). A realistically stretched yet slightly elastic rope behavior was achieved by adjusting physical properties such as stretch resistance and rigidity. The rope was constrained to the platform endpoints, maintaining tension during simulated movement.

The animation was orchestrated along the TimeSlider, beginning at frame 0. Initially, small particles are emitted, gradually increasing in quantity and spatial spread, creating a dynamic visual representation of radioactive activity. Simultaneously, the rope dynamically adapts its shape and tension in response to the animation timeline, reflecting realistic mechanical behavior defined by the simulation settings (Autodesk, 2025c).

2.5 Rendering Techniques and Post-Production Workflow

This project used the Maya Software Renderer due to its flexibility and compatibility with particles, NURBS, and fluid effects, although it entails longer rendering times. While offering high-quality output, Arnold Renderer was less suitable due to licensing constraints and the need for complex lighting adjustments (Autodesk, 2025d).

Post-production was completed using CapCut. Seven individually rendered sequences (converted from AVI to MPG) were enhanced with background edits, text overlays, visual effects, and audio. The result is a coherent animation that effectively communicates the system's design and functionality.

3 Results

3.1 Material Assignment and Visual Enhancement

Materials and colors were assigned based on real-world conventions to enhance realism and clarity. Most components used Blinn material to achieve a metallic finish; only the ropes used Lambert material for a matte appearance.

The container was color-coded as follows:

- Blue – the container body, cooling fins, and top cover,
- Red – the nuclear fuel cores,
- Purple – the steel pipes,
- Gray – all remaining structural components.

The conceptual prototype of a mobile radiation measurement system used:

- White – the platforms,
- Yellow – the ropes (hemp),
- Gray – the electronic components and sensors.

A neutral background in the shape of a storage cave was added, textured with a light Lambert material to keep the focus on the central components and provide context. Figure 5 shows the

3D model of the container along with the conceptual prototype of the mobile radiation measurement system, both created in Autodesk Maya.

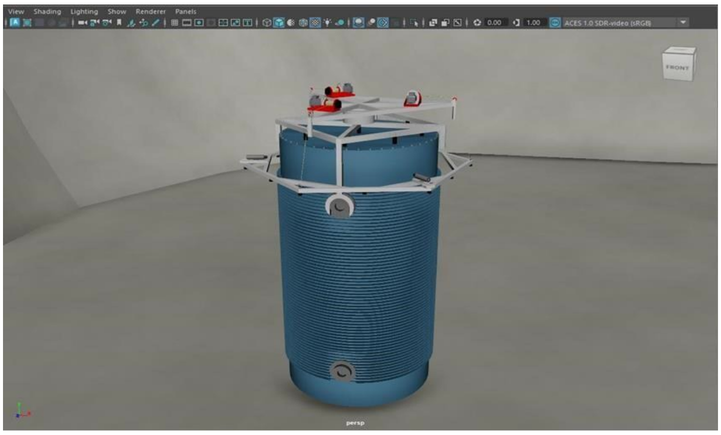

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Fig. 5: *3D model of the container and conceptual prototype of a mobile radiation measurement system in Autodesk Maya*

3.2 Modeling Challenges and Optimization

During the modeling of the interior of the Castor 440/84 container, an initial approach was used to represent the stored fuel assemblies accurately using cylindrical geometries. An initial approach modeled the fuel assemblies using concentric cylinders (blue and red), totaling 182 per compartment across all 84 compartments. This approach significantly increased the computational complexity of the scene, leading to performance issues during rendering. This caused severe performance issues, including rendering failures and application crashes. Sim simplified dual-tone hexagons (gray and red) replaced the cylinders to indicate fuel presence to resolve this issue. This optimization significantly reduced the scene's polygon count, improving rendering stability and allowing for smoother interaction during animation and editing.

3.3 Simulation of Gamma and Neutron Radiation in Autodesk Maya

Gamma radiation and neutron radiation, which are present inside the container and a small percentage of which escape from it, are invisible. They are visualized to illustrate their emission behavior, using red spherical particles as a metaphor.

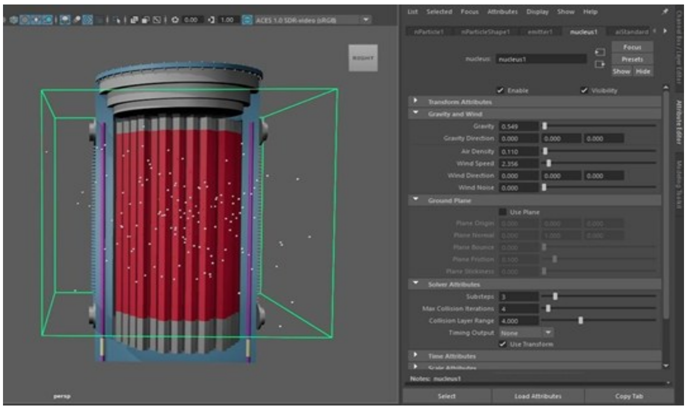

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Fig. 6: *nParticles as a metaphor for radiation and options in Autodesk Maya*

Particle emission was simulated using Maya's nParticles system (FX menu → Create Emitter). During animation playback, this Emitter continuously produces particles, simulating radiation emission from the container (Academic Phoenix Plus, 2019; Riggi et al., 2024).

Parameters such as gravity direction, emission rate, velocity, and spacing were adjusted to achieve a realistic effect. Particles were shaped as small spheres, white in Maya with randomized lifespans, and rendered red to improve visibility.

This approach allows for a visually intuitive representation of radiation fields, supporting communication and understanding of the system's functionality, particularly for audiences without technical backgrounds (see Figure 6) (Goldfinger et al., 2024; Li et al., 2022).

3.4 Storyboard and Scene Structure

The animation process began with creating a storyboard (Rao, 2025), which served as the foundation for visualizing the measurement system in a structured and comprehensible way. The storyboard was divided into four distinct scenes:

- **Scene 1** shows the empty container, which is then filled with internal components and closed with its lids (see Figure 7).

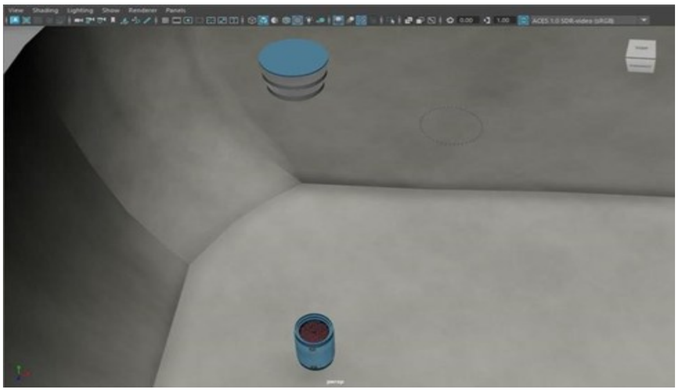

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Fig. 7: *Animation of the first scene (empty container, which is then filled with internal components and closed with its lids)*

- **Scene 2** begins with a cutaway animation of the Castor 440/84, sequentially exposing internal components. These include the fuel assembly hexagons and a simulated radiation emission visualized through red particles. After a brief animation of the emitted particles, they are withdrawn, and the container is closed again (see Figure 8).

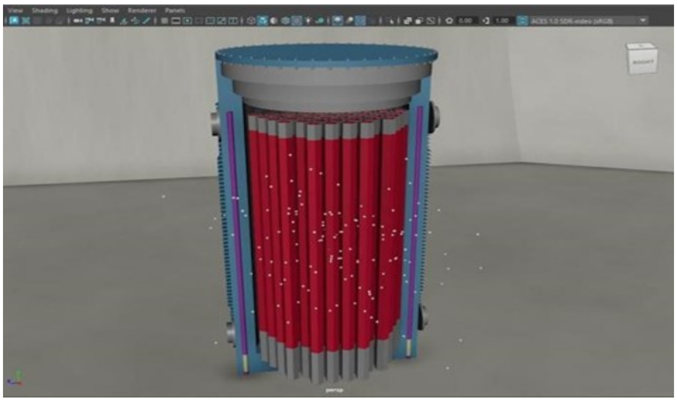

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Fig. 8: *Animation of the second scene (simulated radiation emission visualized through red particles)*

- **Scene 3** illustrates the mobile measurement system being lowered from above onto the container (see Figure 9).

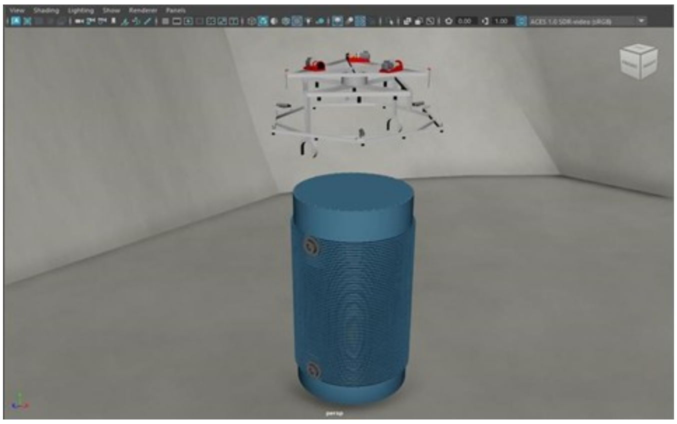

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Fig. 9: *Animation of the third scene (lowering of the mobile measurement system)*

- **Scene 4**, the most critical part of the animation, demonstrates the operation of the mobile measurement system (see Figure 10). It highlights the movement of the platforms, the function of the sensors, and the system's advantages over the previous generation (DCS Monitor II) (Kratzsch & Reinicke, 2024).

Source: Own

Fig. 10: *Animation of the fourth scene (operation of the mobile measurement system)*

The animations were created by placing keyframes at important moments using the "Set Key" function in Maya's Time Slider. This timeline-based approach allowed precise control of object movements and scene transitions (Autodesk, 2025c).

3.5 Rope Animation Using nCloth

nCloth from Maya's FX module was used to animate the rope system connecting the platforms. nCloth is typically used to simulate dynamic cloth-like surfaces. However, a network of connected particles can also be applied to other deformable geometries, such as ropes or cables.

Applying nCloth without constraints initially resulted in a simple gravitational fall, as the rope was not anchored to any object. To realistically simulate tension and attachment, nConstraint – Point to Surface constraints were created at both rope ends: one connected to the auxiliary spinning wheel of the upper platform and the other to the ring structure of the movable platform.

The rope was modeled as a cylinder, and the “looseThickKnit” material preset was used as a starting point. Several Dynamic Properties were adjusted to fine-tune physical behavior, including (MH Tutorials, 2015):

- Stretch Resistance,
- Compression Resistance,
- Deformation Resistance,
- Rigidity.

By carefully calibrating these values, the rope achieved the desired balance between elasticity and structural stability, ensuring realistic movement during animation and interaction with other scene elements (3DMarkAA, 2023). Figure 11 illustrates the visual representation of the hemp element, including the assigned material and adjusted dynamic properties.

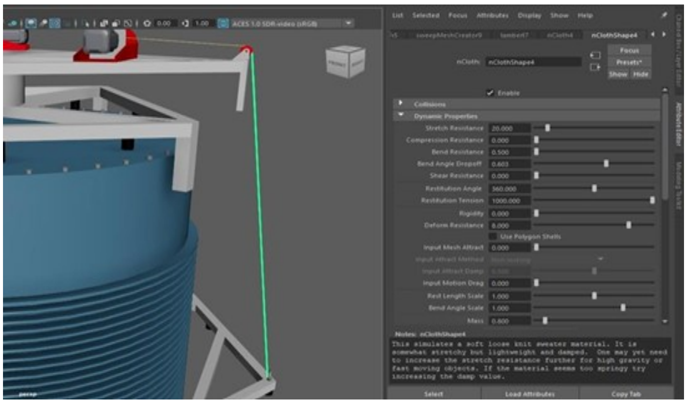

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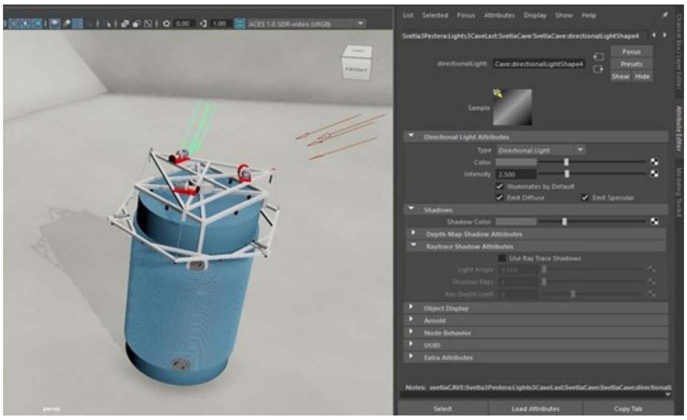
Fig. 11: *Hemp, added material and changed options*

3.6 Lighting and Camera Setup

The final step in the scene design process involved configuring the lighting, camera animation, and rendering settings in Autodesk Maya. Proper lighting was essential to achieve a balanced illumination of both the container and the mobile measurement system.

Two directional lights were added to the scene via Create → Lights → Directional Light (Sir Wade Neistadt, 2018). Figure 12 illustrates the stage illuminated with two configured light sources to enhance depth and visibility in the 3D scene.



Source: Own
Fig. 12: *Lighting the stage with both lights*

The primary light source was assigned an intensity of 3.5, with a light gray color tone for both the light and its shadows. Ray-traced shadows were enabled (Use ray trace shadows) to ensure realistic shadow casting.

The secondary light was positioned above the container to illuminate the interior and measurement system better. It had an intensity of 2.5 and used neutral gray tones for the light and shadows. This light did not use ray tracing, so it did not directly influence the scene's shadows. Directional indicators in the Maya viewport represent both light sources.

For the camera setup, a single static camera was created (Create → Cameras → Camera), following the structure outlined in the storyboard. The camera was initially positioned in front of the container and animated using keyframes to guide its motion through the scene.

The camera movement included:

- A wide initial shot of the container,
- A zoom-in sequence focusing on a sensor to highlight its function and motion,
- A final framing of the entire mobile measurement system.

Additional keyframes were inserted between the leading camera positions to create smooth transitions. All scenes were animated using a frame rate of 24 frames per second, which is standard for 3D animation.

Scene visualization was managed through the Panels → Perspective → Camera1/Persp. option, allowing toggling between the active camera view and a general perspective view. The final rendering resolution was set to 1920 × 1080 pixels in high quality to ensure clarity and suitability for video presentation and public dissemination. Figure 13 illustrates the final keyframe placement in the fourth scene, marking the last camera frame of the animation.

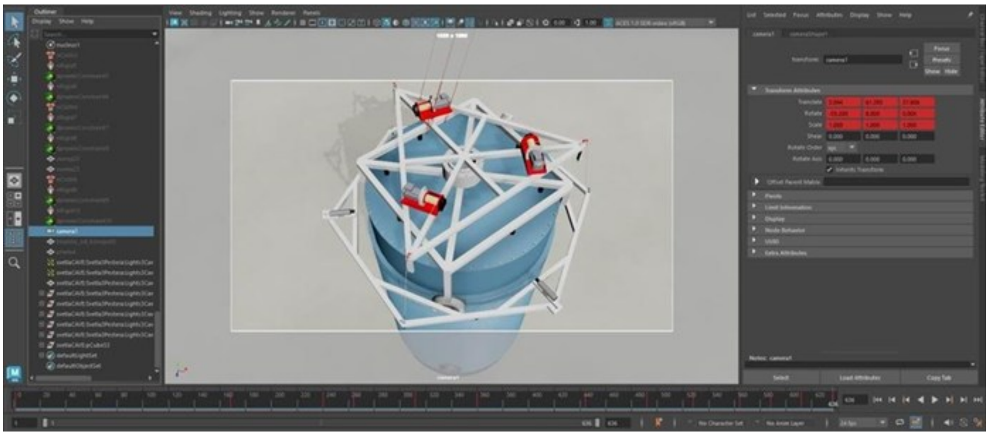


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***Fig. 13:** The fourth scene with a key frame in the last camera frame*

3.7 Rendering Configuration and Output Settings

The final step in the animation workflow was rendering the scenes into video sequences using the Maya Software Renderer, which was selected for its ability to produce high-quality-CPU-based output. All rendering parameters were configured via Render → Render Settings, where general and renderer-specific options were defined.

Key parameters included:

- **Output format**: AVI,
- **Render range**: defined by start and end frames,
- **Camera**: camera1 (as defined in the animation setup),

- **Resolution**: HD 1080 (1920 × 1080 pixels),
- **File name and output directory**: specified for each scene.

Renderer-specific (quality-related) options included:

- **Anti-aliasing quality**: set to High Quality,
- **Multi-pixel filtering**: enabled via Use Multi-Pixel Filter,
- **Raytracing**: enabled, with the following parameters:
  - **Reflections**: 0,
  - **Refractions**: 10,
  - **Shadows**: 10.

These settings were uniformly applied to all four scenes to maintain consistent visual output throughout the final animation. The result was a high-resolution, frame-accurate render suitable for post-production and presentation. Figure 14 shows the rendered image produced using the Maya Software Renderer.

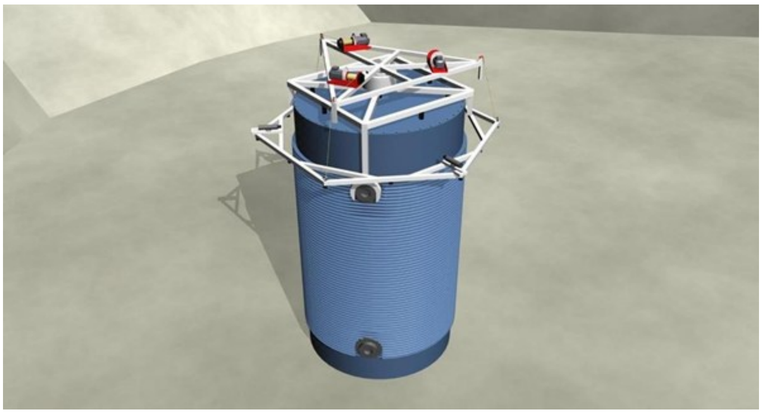

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***Fig. 14:** Render image in Maya Software*

4 Discussion

This study demonstrates that animated 3D visualization is a powerful tool for communicating complex systems like mobile radiation monitoring units. The primary outcome confirms that Autodesk Maya, in combination with CapCut, enables the creation of technically grounded yet accessible animations. These represent mechanical elements and abstract phenomena such as radiation behavior.

Compared to existing visual documentation in the field, which typically relies on static CAD drawings or text-heavy reports (Goldfinger et al., 2024; Rao, 2025), this animated visualization offers a more immersive and dynamic perspective. Prior approaches often neglected the communicative potential of cinematic sequencing, interactive timing, and symbolic augmentation. By leveraging these techniques, this study contributes to the emerging practice of using 3D storytelling for interdisciplinary and public communication in high-stakes technical domains such as nuclear monitoring.

However, the approach has limitations. The system is still conceptual, and the modeling process was resource-intensive. Some simplifications (e.g., symbolic geometries) may compromise technical accuracy in favor of visual clarity. Moreover, the lack of real measurement data restricts empirical validation.

Conclusion

This article has shown how animated visual storytelling can enhance the understanding and outreach of conceptual radiation monitoring systems. An engaging animation of a next-generation prototype was developed by leveraging Autodesk Maya for simulation and CapCut for post-production. The video highlights advancements over previous systems, such as DCS Monitor II, particularly in mobility, spatial efficiency, and automation potential. It also illustrates how visualization supports stakeholder communication, student engagement, and interdisciplinary collaboration.

Communicating such complex technical systems to a broad audience requires more than traditional documentation. Visual tools such as animated videos, interactive presentations, and 3D models are essential to convey functionality, purpose, and innovation, especially to non-experts. The animated video developed in this project serves as a means of public outreach and a tool to attract potential investors, inspire students, and inform professionals from related fields, including academia and industry.

Ultimately, the project highlighted the importance of interdisciplinary collaboration blending mechanical engineering, nuclear technology, design, and media production to make complex innovations accessible, understandable, and impactful.

Future research should include viewer feedback, engagement metrics, and comprehension assessments to substantiate the assertion that animated storytelling enhances understanding. This data would provide a clearer picture of how effectively such media communicates complex technical information to various audiences. Future articles should also integrate real-world data, validate physical prototypes, and evaluate viewer comprehension. Additionally, this project encourages the broader use of 3D tools in industrial and educational applications beyond their traditional roles in advertising and media.

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VIZUALIZACE MOBILNÍHO SYSTÉMU MĚŘENÍ RADIACE PRO KONTEJNERY S JADERNÝM ODPADEM POMOCÍ ANIMACE V PROGRAMU AUTODESK MAYA

Článek představuje vývoj animované multimediální prezentace pro prototyp měřicího systému určeného k radiačnímu monitorování přepravních a skladovacích kontejnerů na radioaktivní odpad. 3D model kontejneru byl vytvořen pomocí softwarového balíku Autodesk Maya s využitím polygonální geometrie pro modelování. K simulaci radiace i pohybu lan byl použit subsystém FX programu Maya. Postprodukce byla provedena pomocí editoru videa CapCut. Finální animace bude použita pro účely styku s veřejností společností IPM a na podporu další fáze společného projektu: „Vývoj a testování metod pro neinvazivní analýzu stavu zásob přepravních a skladovacích kontejnerů během prodlouženého meziskladu".

ANIMATIONSGESTÜTZTE VISUALISIERUNG EINES MOBILEN MESSSYSTEMS FÜR NUKLEARABFALLBEHÄLTER MIT AUTODESK MAYA

Diese Arbeit stellt die Entwicklung einer animierten multimedialen Präsentation für einen neuen Prototyp eines Messsystems vor, das zur Überwachung der Strahlung von Transport- und Lagerbehältern für radioaktive Abfälle dient. Das 3D-Modell des Behälters wurde mit der Software Autodesk Maya unter Verwendung polygonaler Geometrien erstellt. Das FX-Modul von Maya wurde zur Simulation von Strahlung und Seilbewegung eingesetzt. Eine Kombination aus Keyframe-Animation und physikalischer Simulation ermöglichte realistische Bewegungsabläufe in der Szene. Die Postproduktion erfolgte im Videoschnittprogramm CapCut, in dem Text, Ton und zusätzliche Animationen im MP4-Format integriert wurden. Die finale Animation wird vom IPM für Zwecke der Öffentlichkeitsarbeit und zur Unterstützung der nächsten Projektphase verwendet: „Entwicklung und Erprobung von Verfahren zur nichtinvasiven Analyse des Inventarzustands von Transport- und Lagerbehältern bei verlängerter Zwischenlagerung".

WIZUALIZACJA MOBILNEGO SYSTEMU POMIARU PROMIENIOWANA DLA KONTENERÓW NA ODPADY RADIOAKTYWNE PRZY POMOCY ANIMACJI W PROGRAMIE AUTODESK MAYA

Niniejszy artykuł przedstawia opracowanie animowanej prezentacji multimedialnej dla prototypu systemu pomiarowego przeznaczonego do monitorowania promieniowania pochodzącego z kontenerów transportowych i magazynowych na odpady radioaktywne. Model 3D kontenera został utworzony przy użyciu pakietu oprogramowania Autodesk Maya, z wykorzystaniem geometrii wielokątowej do modelowania. Do symulacji promieniowania oraz ruchu lin wykorzystano podsystem FX programu Maya. Postprodukcja została przeprowadzona przy użyciu edytora wideo CapCut. Gotowa animacja zostanie wykorzystana przez spółkę IPM do celów public relations oraz do wsparcia kolejnego etapu wspólnego projektu: „Opracowanie i testowanie metod nieinwazyjnej analizy stanu zapasów kontenerów transportowych i magazynowych podczas wydłużonego przechowywania tymczasowego".