Certification testing for Sony, Nintendo, and Microsoft Standards: Timing and Typical Defect Areas

Introduction

Certification testing is a vital part of the game development process and is necessary to guarantee that games released on platforms like Microsoft, Sony, and Nintendo meet the demanding standards of quality and performance expected by gamers. This testing process involves adhering to strict standards and guidelines, such as Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, to confirm that the game is suitable for release.

Microsoft Xbox Requirements (XRs), are guidelines that video game developers must follow when creating games for the Xbox platform. The XRs outline a comprehensive list of technical requirements that games must meet, including compatibility with different hardware and software configurations, performance criteria, and other technical standards.

Similarly, the Technical Requirements Checklist (TRCs) set by Sony are guidelines for video game developers creating games for the PlayStation platform. These requirements cover various technical aspects such as compatibility with different hardware and software configurations, performance criteria, and other technical standards that the games must meet.

Nintendo Lot Checks are a series of evaluations that are performed on video games that are intended for release on the Nintendo platform. These checks evaluate the game's performance, stability, compatibility, and overall quality, and they are designed to ensure that the games released on the Nintendo platform meet the high standards of quality and performance demanded by gamers.

There are two parts of certification testing in the video game world – pre-certification and final certification testing. Pre-certification testing is performed by your internal or outsourced QA team and evaluates all the test cases identified in the TRCs, XRs, and Lot Checks, just like final certification. In addition, pre-certification provides developers with the opportunity to resolve any bugs before submitting to platform holders, thus increasing the likelihood of a successful first pass. Final certification testing occurs when the final or release build is sent to the individual platform manufacturing teams to be tested by their resources.

TestFly quality assurance (QA) teams ensure that games meet the established standards for each gaming platform. We have a thorough understanding of the technical requirements set by each platform, as well as the skills and tools required to test the games against these requirements.

In this blog, we will delve into pre-certification testing, examining the optimal timing for performing it and highlighting the common defect areas that our testing has revealed. By addressing these key areas during pre-certification testing, video game developers can improve the chances of a successful certification process and a positive player experience.

Timing: when to perform pre-certification testing

Testing for certification with gaming industry standards set by Sony, Nintendo, and Microsoft is a crucial aspect of game development. To meet these standards, it is essential to start testing as early as possible during the software development life cycle (SDLC) and to continue testing throughout the entire process. The last pre-certification test should be the release candidate and performed just before sending the game for final certification.

Starting certification testing early in the development process of a video game can provide several benefits, including:

- Early identification of issues: by starting certification testing early, potential issues can be identified and addressed sooner, reducing the risk of delays or costly changes later in the development process.
- Improved quality: early testing helps ensure that the game meets industry standards and requirements, which can result in a higher-quality product overall.
- Increased efficiency: by testing and fixing issues early on, developers can avoid having to repeat work or make significant changes to the game later in the development process, saving time and increasing efficiency.
- Better preparation for launch: early certification testing can help prepare the game for launch by ensuring that it meets all necessary requirements and regulations. This can reduce the risk of delays or costly changes just before launch.
- Improved player experience: by ensuring that the game meets industry standards and regulations, players are more likely to have a positive experience with the game, leading to improved user satisfaction, and positive reviews. This allows the publishers to build a bigger community with have increased playing time and in-game purchases.

Testing as early as possible in the SDLC allows us to start verifying against standards when the foundation of the game is being laid, and any issues can be easily corrected before they become major problems.

The earlier you identify and address these issues, the less time, and resources you'll need to correct them. In addition, starting testing early in the development process provides more opportunities for developers to make improvements, which can lead to a better overall product.

It's crucial to note that the standards in the gaming industry set by Sony, Nintendo, and Microsoft are constantly changing. Our TestFly QA teams stay current with the latest guidelines and requirements to ensure that all changes and additions to the game comply with certification standards.

Microsoft XRs, Sony TRCs, and Nintendo Lot Checks should be tested at various stages of the SDLC, from early development to final release. This will help ensure that the game follows the certification standards and provide a high-quality experience for players. Our QA teams play a crucial role in making this happen, so it is important to invest the time and effort necessary to test effectively.

Typical Defect Areas

There are several critical areas in certification testing that can pose challenges and increase the risk of defects. Our experience has shown that the following key areas have a higher likelihood of causing these difficulties and defects:

Compatibility Issues

- Compatibility issues between the game and the platform can cause significant problems. The game must run seamlessly on the platform, and compatibility issues can result in poor performance, graphical errors, and other technical problems. When conducting Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, various areas may give rise to compatibility issues. Some of these areas are:
- Hardware compatibility: The game must be compatible with the hardware specifications of the platform, including display resolution, graphics cards, and memory.
- Operating system compatibility: The game must be compatible with the operating system of the platform, including compatibility with the latest updates.

- Input device compatibility: The game must be compatible with the input devices supported by the platform, such as controllers, keyboards, and mice.
- Network compatibility: For online games, the game must be compatible with the network infrastructure of the platform, including network protocols and connection speeds.
- Save game compatibility: The game must be compatible with the save game functionality of the platform, including the ability to save progress and resume play.
- Cross-platform compatibility: The game must be compatible with other platforms, including the ability to play multiplayer games with players on other platforms.
- Localization compatibility: The game must be compatible with different language and cultural requirements, including text, audio, and graphical elements.
- In App Purchases: Our experience has demonstrated that in-app purchases have a higher probability of causing technical difficulties and defects. This is due to the intricate nature of in-app purchase transactions, which involve the exchange of real money for virtual goods or services within the game. These transactions require seamless integration between the game, platform, and payment systems, which can lead to complex bugs if not thoroughly tested. Additionally, issues with in-app purchases can cause significant frustration among players and negatively impact their experience, making it imperative for QA teams to thoroughly test these features.

Performance

Performance is a critical factor for the player experience. Games that are slow to load or suffer from frame rate drops can be a major problem and will negatively impact the player's experience. When performing Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, performance defects can arise in several areas. Some of these areas are:

- Frame rate: The game must maintain a consistent frame rate, without any lag or stuttering, to provide a smooth gaming experience.
- Load time: The game must load quickly, without any long pauses or wait times, to keep players engaged.
- Memory usage: The game must use memory efficiently, without causing any crashes or freezes, to avoid frustrating players.
- CPU usage: The game must use the CPU efficiently, without causing any performance issues, to ensure smooth gameplay.
- Graphics quality: The game must provide high-quality graphics, without any visual artifacts or distortions, to enhance the player experience.
- Audio quality: The game must provide high-quality audio, without any static or dropouts, to enhance the player experience.

- Network performance: For online games, the game must provide fast and reliable network performance, without any lag or disconnections, to ensure an enjoyable gaming experience.

User interface

The user interface is the way the player interacts with the game. A poorly designed or confusing user interface can result in frustration and negatively impact the player's experience. When performing Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, user interface defects can arise in several areas. Some of these areas are:

- Navigation: the game must have intuitive and user-friendly navigation, making it easy for players to access and navigate through different game features.
- Button mapping: the game must have a clear and well-defined button mapping, making it easy for players to control the game.
- Text and font size: the game must have a legible text and font size, making it easy for players to read and understand in-game information.
- User prompts: the game must have clear and concise user prompts, making it easy for players to understand what actions to take in the game.
- Display of game information: the game must display relevant game information, such as score, lives, and health, in an easily accessible and understandable manner.
- Performance issues: slow load times, stuttering graphics, or poor frame rates can negatively impact the player experience and lead to certification failure.
- Stability issues: crashes, freezes, or other stability issues can make the game unplayable and lead to certification failure.
- Cheating and hacking: games that are susceptible to cheating or hacking can also fail certification, as these issues can compromise the integrity of the game and negatively impact the player experience.
- Content appropriateness: games that contain inappropriate or offensive content can also fail certification. This includes issues such as excessive violence, sexual content, or hate speech.
- Consistency: the game's user interface must be consistent across different menus, screens, and levels to prevent confusion and frustration for players.

Audio and video quality

The audio and video quality of the game is a key factor in the player's enjoyment. Poor audio quality, syncing issues, and video artifacts can significantly detract from the player's experience.

When performing Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, audio, and video quality defects can arise in several areas. Some of these areas are:

- Audio syncing: The game's audio must be in sync with the on-screen action, providing a seamless and immersive experience for players.
- Volume control: The game must have adjustable volume controls, allowing players to control the volume of the game audio.
- Audio quality: The game's audio must be of high quality, without any distortion or crackling sounds.
- Video syncing: The game's video must be in sync with the on-screen action, providing a seamless and immersive experience for players.
- Video quality: The game's video must be of high quality, without any glitches, stuttering, or freezing.
- Frame rate: The game's frame rate must be stable, providing a smooth and fluid experience for players.
- Resolution: The game's video resolution must be appropriate for the platform and display, providing a clear and visually appealing experience for players.

Game stability

Game stability is critical to ensure that the game runs without crashes or freezes. Games that are unstable can be a major problem, especially if they cause the player to lose progress. When conducting Microsoft XRs, Sony TRCs and Nintendo Lot Checks, various areas may give rise to game stability issues. Some of these areas are:

- Crashes: The game must not crash or freeze, providing a stable and seamless experience for players.
- Performance issues: The game must run smoothly without any lag or stuttering, providing a fast and responsive experience for players.
- Memory leaks: The game must not consume excessive amounts of memory, avoiding performance degradation and potential crashes.
- Compatibility issues: The game must be compatible with the platform and its hardware, avoiding any issues that may impact the player's experience.
- Save data issues: The game must allow players to save their progress and data without any problems, ensuring that the game can be played over multiple sessions.
- Load times: The game must load quickly and efficiently, allowing players to start playing the game quickly.
- Bugfixes: The game must be free from any bugs or glitches that may impact the player's experience.

Content quality

The quality of the game's content is another important factor. Poorly written dialogue, unclear objectives, and confusing game mechanics can all result in a poor player experience. When performing Microsoft XRs, Sony TRCs, and Nintendo Lot Checks, content quality defects can arise in several areas. Some of these areas are:

- Storyline: The game's storyline must be engaging and well-written, providing players with a compelling reason to play the game.
- Gameplay mechanics: The game's mechanics must be intuitive and fun, providing players with a satisfying experience.
- Balancing: The game must be balanced, providing players with a challenging but fair experience.
- Level design: The levels must be well-designed, providing players with a varied and engaging experience.
- Character design: The game's characters must be well-designed, providing players with a memorable and interesting experience.
- Art style: The game's art style must be consistent and appealing, providing players with a visually pleasing experience.
- Audio: The game's audio must be high-quality and appropriate, providing players with an immersive experience.

Testing for Different Languages and Regions

Testing for different languages and regions can be complex and time-consuming, but it is essential to ensure that the game is accessible and appealing to players around the world. By addressing these issues early in the development process and during certification testing, developers can increase the likelihood of successful certification and a successful launch.

In video game certifications, testing for different languages and regions can also present several challenges that can cause failure to certify. Some of the major issues include:

- Localization errors: inconsistencies in translation, cultural references that do not make sense in other regions, or incorrect use of regional formats (such as date and time) can lead to certification failure.
- Text and font issues: problems with text wrapping, text truncation, or font issues can also result in certification failure.

- Audio and voice-over issues: audio and voice-over recordings that are not properly synchronized or that are not translated into the target language can also cause certification failure.
- Certification with regional regulations: video games may need to comply with different regulations and standards in different regions, such as content appropriateness, and other legal requirements.

In conclusion, certification testing for video games presents several challenges for developers and QA teams. To overcome these, TestFly uses a comprehensive testing plan and adequate resources to meet the demands of platform makers such as Sony, Nintendo, and Microsoft.