Surpass
Powering Assessment

A transformation in assessment development:

Surpass Luma: Faster item development and higher acceptance rates

Inteleos

Background

Inteleos is a global non-profit community of more than 150,000 medical professionals united in ensuring that patients obtain the highest quality healthcare. For more than 50 years, Inteleos has defined excellence through quality patient care and certification. Inteleos serves as the governing and managing organization for the American Registry for Diagnostic Medical Sonography® (ARDMS®), the Alliance for Physician Certification & Advancement™ (APCA™), and the Point-of-Care Ultrasound (POCUS) Certification Academy™.

Among their services, Inteleos develops and delivers high-stakes healthcare certification exams across multiple programs and specialties. To ensure clinical accuracy and relevance, items are developed by a global network of volunteer subject matter experts (SMEs).

As demand for new assessment content increases, Inteleos has faced growing pressure on SME time and capacity. The traditional approach of manual item writing can be extremely time and labour intensive, particularly during the drafting stage, and requires significant cognitive effort to generate quality items.

With the rapid improvements in artificial intelligence (AI), Inteleos is exploring how to leverage this capability to support SMEs by reducing the time spent on item development, while ensuring full human oversight, security, and alignment with established assessment standards.

INTELEOS AT A GLANCE

150,000+
Certified medical professionals

113
Countries

18
Certifications

31
Specialities

1.7 million+
Patients served daily

Key objectives for this study include:

Reprioritize SME time from manual item drafting to technical oversight

Address the gap between rising demand for new assessment content and the limited availability of SMEs

Improve efficiency and productivity for both SMEs and internal assessment teams, without compromising quality or governance

CURRENT CHALLENGES

Free up **SMEs' time**

Meet rising content **demand**

Enhance efficiency & quality

TYPICAL ITEM DEVELOPMENT YEAR

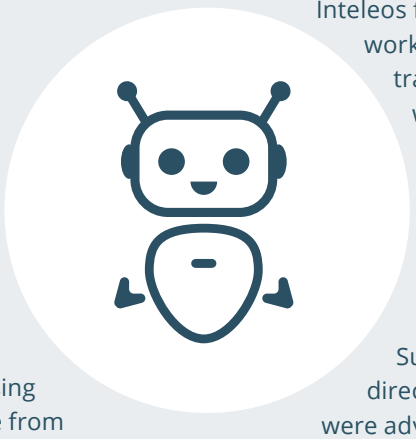
Exhibit 1. 2024 Item Development (typical year)

Exam	Developed (N)	Accepted (N)	Acceptence Rate
ARDMS	3775	1644	43.5%
APCA	1197	793	66.25%
Total	**4972**	**2437**	**49.0%**

Inteleos engages approximately 400 SMEs to write items annually. Item writing is usually conducted asynchronously using Surpass Item Authoring Tasks. Exhibit 1 presents the item development statistics for 2024.

Surpass Luma workshop

Inteleos began testing various platforms that leverage AI for item development. Starting in 2024, Inteleos conducted pilot sessions with Surpass Luma with the imperative that the items adhere to the organization's principles for responsible AI use, including human oversight, security, transparency, and workflow integration. Ultimately, Inteleos adopted Surpass Luma for their AI item development.



In April 2025, Inteleos recruited 95 SMEs from ARDMS (sonographers) and APCA (physicians) to draft questions (item stems), create and refine answer options (distractors), and improve clarity using Surpass Luma. The participating SMEs were from 14 countries: Bangladesh, Cameroon, Canada, Cayman Islands, Egypt, France, Mexico, Nigeria, Pakistan, Romania, Saudi Arabia, Singapore, United Kingdom, and United States. The majority of the SMEs were from the United States. The SME participation was deemed representative of the overall SME pool.

Inteleos facilitated the item development workshop via Zoom, starting with structured training on how to use Surpass Luma. SMEs were separated into 16 breakout rooms by specialty exam, provided opportunity for guided practice developing items, and then asked to develop multiple-choice items in topics appropriate for their specialty exam. Surpass Luma was not limited to domain knowledge. Because the Surpass Luma functionality is embedded directly within the Surpass Platform, items were advanced to review and approval workflows without extra steps. The items were then reviewed by a separate panel of SMEs who determined whether the items were acceptable for use on an exam.

Item development results

In approximately 90 minutes, the SMEs used Surpass Luma to draft a total of 321 items. Some item writers used images provided by Inteleos.

Based on the positive feedback and results from the April workshop, Inteleos continued item development with SMEs through 2025. They offered Surpass Luma training to additional SMEs who wanted to use the tool for their item writing projects between May and December 2025, yielding a total of 966 items developed with assistance from Surpass Luma. All items went through the Inteleos standard quality assurance process and were evaluated for inclusion on an exam.

Exhibit 2 presents a comparison of total acceptance rates and by exam for items developed with and without Surpass Luma assistance for the entire year. Overall, the Surpass Luma-assisted items resulted in 15% higher acceptance rates than items developed without Surpass Luma, indicating the potential for Surpass Luma to achieve comparable, if not better number and quality of items, while increasing SME efficiency.

Exhibit 2. 2025 Item Development with and without Luma

Exam	Without Surpass Luma			With Surpass Luma		
	Developed (N)	Accepted (N)	Acceptance Rate	Developed (N)	Accepted (N)	Acceptance Rate
ARDMS	3406	1660	48.7%	865	498	57.6%
APCA	1152	695	60.3%	101	77	76.2%
Total	**4558**	**2355**	**51.7%**	**966**	**575**	**59.5%**

KEY OUTCOMES

Faster item creation
Estimated 76% time saved per item

75% faster item development
45-60 min > 10-15 min per item

15% Higher acceptance rates
More items making it through review - less wasted effort

Improved SME productivity
4x more items a SME can draft in the same time

Consistent quality standards

In 2025, a total of 5524 items were developed with 2930 items being accepted for future form use. Approximately 24% of the accepted items were developed with Surpass Luma assistance.

Further, Inteleos estimates that Surpass Luma reduced the item development time from approximately 45–60 minutes per item down to 10–15 minutes, resulting in approximately 75% time saved per item and leading to potentially four times as many items that can be drafted in the same time period.

This estimate is based on anecdotal data regarding the time SMEs took to complete their 15-item writing projects. It should be noted that some efficiency gained in drafting the items was lost due to time spent searching for alternate source information to confirm the accuracy of the item content.

SME feedback results

Following the SME Workshop in April 2025, SMEs completed a post-workshop survey to provide feedback on Surpass Luma. Out of 95 SMEs, 49 responded to the survey. Exhibits 3 and 4 present results.

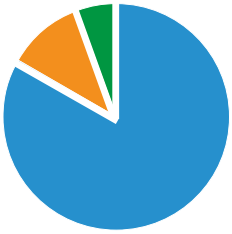


Exhibit 3. How easy was it to use Surpass Luma?

- Easy / Very easy
- Neutral
- Difficult

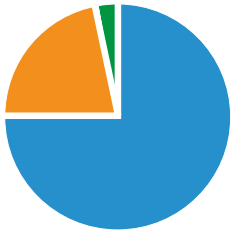


Exhibit 4. What was the general difficulty of the items generated by Surpass Luma?

- About right
- Too easy
- Too difficult

SMEs REPORTED THE FOLLOWING POSITIVE OUTCOMES ABOUT SURPASS LUMA:

Improved time efficiency for item development.

90% of the SMEs reported that Surpass Luma reduced the time required to write items compared to the traditional approach. Many highlighted the value of Surpass Luma during early stages of drafting, helping them move quickly from initial ideas to structured item drafts. By reducing the effort required to start from a blank page, Surpass Luma enabled SMEs to focus more of their time on applying clinical judgement and refining content rather than item structure.

Strong SME endorsement and confidence in continued use.

Surpass Luma was strongly endorsed by the SME community. 90% of respondents said they would recommend Surpass Luma to other volunteers, and 80% anticipated continued use in future item development projects. Confidence with the tool was established quickly. 90% of SMEs reported feeling comfortable using Surpass Luma after one project or less, demonstrating that the tool could be adopted without adding significant training burden or disrupting established workflows.

Consistent alignment with assessment standards.

All SMEs agreed that Surpass Luma-generated items aligned with Inteleos' item writing style guidelines, demonstrating consistency in structure, tone, and formatting. The items were determined to meet established style standards prior to entering formal technical review.

Discussion and next steps

Based on the results of this case study, items generated using Surpass Luma achieved higher acceptance rates during review compared to traditionally developed items that did not involve the use of Surpass Luma, indicating that AI assistance improved item quality while reducing the effort required to move items from draft to approval.

By embedding AI directly into the existing item development process, Inteleos was able to support SMEs more effectively, helping them focus their expertise where it matters most, on clinical accuracy, relevance, and assessment quality. However, Inteleos notes that some efficiency was lost due to time spent confirming the accuracy of the item content due to Surpass Luma-specified reference inaccuracies.

NEXT STEPS

Given the positive results in terms of efficiency and positive reception from SMEs, Inteleos will continue to leverage Surpass Luma for future item development. Important next steps include:

NEXT STEPS FOR INTELEOS

- Increasing the percentage of items developed using Surpass Luma
- Improving the item acceptance rates
- Evaluating psychometric results
- Exploring the ability to seamlessly integrate Surpass with external language models through an MCP server.

NEXT STEPS FOR SURPASS

- Improving the accuracy of AI-specified references and citations
- Generating images to support items or generate items from provided images
- Adding capacity to develop additional item types via Surpass Luma
- Adding capacity to bulk generate items from a test blueprint.