

## The Stakeholder Playbook

The purpose of the Stakeholder Playbook is to enable system developers to appreciate the different ways in which stakeholders need to "look inside" of the AI/XAI system.

The Playbook was synthesized from interviews with eighteen senior scientists and officials who represent the diverse stakeholder groups that are represented in the Playbook: Jurisprudence, Contracting, Procurement, Program Management, Development Team Lead, Training, System Integration, System Evaluation, Policy, and End-user/Adopter.

For each Stakeholder group, the Playbook lists their Explanation Requirements, their Requirements for Information Access, and one or more Cautions that the designers of AI/XAI systems should be aware of.

Different stakeholders have different capabilities, different sensemaking requirements, different responsibilities, and different immediate goals. These factors combine to determine what constitutes satisfactory and actionable understanding.

A detailed Technical Report on the interview method, the results, and the development of the Playbook is available upon request [rhoffman@ihmc.us]

JURISPRUDENCE
<p><u>Explanation Requirement:</u> Analysis of system biases, assumptions, and bounding conditions.</p> <p><u>Explanation Requirement:</u> Description of the features upon which the system relies.</p> <p><u>Access Requirement:</u> To the system development team— trusted software engineers, mathematicians.</p> <p><u>Access Requirement:</u> To experienced and trusted domain practitioners.</p>

CONTRACTING; PROCUREMENT
<p><u>Explanation Requirement:</u> Global explanation of "how it works" and how the data are processed.</p> <p><u>Explanation Requirement:</u> Global explanation of architecture and functionality (how the data are processed).</p> <p><u>Explanation Requirement:</u> Analysis of system biases, assumptions, and bounding conditions.</p> <p><u>Explanation Requirement:</u> Description and explanation of the data that were used to train the model.</p> <p><u>Explanation Requirement:</u> Analysis of the model's fitness for the data that are used in the operational environment.</p> <p><u>Explanation Requirement:</u> Analysis of the confidence or applicability of the system for the particular questions that are being asked.</p> <p><u>Explanation Requirement:</u> Assurance of data quality and curation.</p> <p><u>Access Requirement:</u> Trusted software engineers and domain practitioners.</p> <p><u>Access Requirement:</u> Leads with technical background need access to explanations of technical details.</p>

<b>PROGRAM MANAGER; DEVELOPMENT TEAM LEAD</b>
<p><u>Explanation Requirement:</u> Global explanations of "how it works."</p> <p><u>Explanation Requirement:</u> Description of the data that the AI ingests; assumptions about the data.</p> <p><u>Explanation Requirement:</u> Analysis of how the system will be integrated with other systems in the broader work system.</p> <p><u>Explanation Requirement:</u> Analysis of system strengths, weaknesses, and bounding conditions (system assumptions).</p> <p><u>Explanation Requirement:</u> Analysis of how the system will be integrated with other systems in the broader work system.</p> <p><u>Caution:</u> Some Program Managers and Development Team Leads will need to know the details of the system processes and algorithms.</p>

<b>SYSTEM INTEGRATOR</b>
<p><u>Explanation Requirement:</u> Explanation at the detailed technical level; Needs to be able to "look under the hood."</p> <p><u>Access Requirement:</u> To trusted software developers.</p>

<b>SYSTEM EVALUATOR</b>
<p><u>Explanation Requirement:</u> Explanation of the inputs, outputs and their relations.</p> <p><u>Explanation Requirement:</u> Information of how the system manages the trade-offs in operational conditions.</p> <p><u>Explanation Requirement:</u> Information supporting the design of usability and performance tests.</p> <p><u>Explanation Requirement:</u> Operational definitions of the proposed "metrics" (measures) to be used in performance assessment.</p> <p><u>Access Requirement:</u> Feedback from prospective users.</p> <p><u>Caution:</u> Not all evaluators need to understand the technical detail (e.g., algorithms).</p>

TRAINER
<u>Explanation Requirement:</u> Rich corpus of edge cases.

POLICY MAKER
<u>Explanation Requirement:</u> Global explanation that is satisfying and consistent with how the system actually works.
<u>Explanation Requirement:</u> Descriptions of system biases, assumptions, and bounding conditions.
<u>Explanation Requirement:</u> Descriptions of system limitations and weaknesses.
<u>Explanation Requirement:</u> Demonstrations that include edge case scenarios.

END-USER; ADOPTER
<u>Explanation Requirement:</u> Global and local explanations that are satisfying and consistent with how the system actually works.
<u>Explanation Requirement:</u> Explanation of data inputs and how the system processes the data.
<u>Explanation Requirement:</u> Results of a cost-benefit analysis of different tools, with respect to the user's goals and responsibilities.
<u>Explanation Requirement:</u> Explanations need to strike a balance between superficiality and technicality.
<u>Explanation Requirement:</u> Explanations that support troubleshooting and system maintenance.
<u>Access Requirement:</u> To the system development team— trusted developers and software engineers.
<u>Caution:</u> End-users sometimes do not care or don't need to know "how it works."
<u>Caution:</u> End-Users often desire better explanations than the ones that are provided.
<u>Caution:</u> Continuing explanation is required as the input data, the work system context, or the operational environment change.