

Assistive Access at the Point of Need

*Physical identity as a doorway to information,
communication, participation, and support*

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State of Stick, Co.

An opportunity framework and evaluation plan. Company-authored; not peer-reviewed. Proposed applications are distinguished from existing platform foundations. No clinical results or customer deployment are claimed.

Web edition: stateofstick.co/research/assistive-access/

Executive summary

A familiar object can become a reliable place to begin. A marker beside a doorway could open a chosen departure routine. A label on a household item could open an accessible description. A workstation could offer one instruction at a time. An assistive device could carry a continuing connection to its approved manual, repair service, and loan history.

State of Stick's opportunity is to connect physical context to appropriate digital support through its AltStatic physical-to-digital connection and managed identity infrastructure. The core proposition is **object or place / current, approved information / a person's chosen action / optional human support**. The value would come from making useful support easier to find and maintain, with less searching and fewer repeated explanations.

This paper maps the opportunity across vision, hearing, communication, cognition, movement, daily living, education, employment, community participation, and the lifecycle of assistive equipment. It organizes applications by the task a person wants to accomplish rather than assuming everyone with a diagnosis needs the same interface. It is a broad opportunity framework, not an exhaustive inventory of disability or a claim that one product can meet every need.

The repository contains general connected-content infrastructure and an interactive concept demonstration of routines, activities, supported work, and requesting help. That is a foundation for investigation. It does not establish a deployed assistive product, clinical benefit, accessibility conformance, or an authorized customer pilot. The application proposals below are original company hypotheses informed by the cited guidance; the external sources do not validate State of Stick.

The recommended first evaluation is a small set of optional, non-clinical resources at ordinary activity or work locations, designed with disabled participants. Success means people can find, understand, use, decline, and recover from the experience on their own terms. Scan counts alone cannot establish that success.

1. The opportunity: support where life happens

Assistive technology encompasses products, systems, and services that support functioning and participation. WHO estimates that more than 2.5 billion people need one or more assistive products. This describes global need, not State of Stick's addressable market or evidence of demand for connected markers. [1]

Information often lives somewhere other than the place where it is useful: a binder, an app menu, a portal, a remembered conversation, or a staff member's knowledge. A persistent reference on an object or in a place could reduce that retrieval burden while letting the responsible publisher update the destination.

The physical-to-digital connection can serve three related roles:

- **Direct assistance:** help a person access information, express a choice, or work through a self-selected task.
- **Environmental accessibility:** make a venue, classroom, workstation, or household resource easier to understand and use.

- **Support infrastructure:** help authorized people maintain equipment, publish approved materials, and coordinate service without turning a public marker into a private record.

A person may need several access modes together, or different modes at different times. Temporary injury, fatigue, changing vision, noisy surroundings, language, reading confidence, and device access also affect an interaction. Diagnosis should not automatically select a workflow or disclose a person's circumstances.

2. What the technology contributes

An NFC tap or QR scan is an entry method. The underlying opportunity is a stable physical reference with a changeable, governed destination. A plain printed instruction may still be the better solution when the information is short and unlikely to change. A managed connection becomes more useful when content needs multiple formats, localization, revision, permissions, or a continuing service relationship.

The proposed assistive sequence has six stages:

1. **Find the entry point.** Identify an object or location through reachable placement, clear labeling, and appropriate tactile or visual cues.
2. **Open through a usable method.** Offer an NFC, QR, readable address, bookmark, shared device, or human-assisted route appropriate to the setting.
3. **Resolve the context.** Identify the configured resource and its current publication status without assuming who the person is.
4. **Choose the presentation.** Offer relevant text, images, audio, captions, language, or simplified steps without requiring disclosure of a diagnosis.
5. **Act or ask.** Read, communicate, continue, stop, or request help. Confirm consequential actions before sending them.
6. **Maintain the connection.** Review content, repair markers, update access rules, and provide a useful destination when a program ends.

Ordinary NFC and QR links do not authenticate a person. A supported secure-tag workflow can provide stronger evidence about a physical item, but it still does not establish a person's consent, comprehension, identity, or completion of a task. A tag is not a GPS tracker, obstacle detector, fall sensor, or emergency response system.

3. Application landscape

Every application in this section is a **proposed use**, not an available or validated assistive feature. Each needs an appropriate content owner, access design, participant evaluation, and maintenance plan. The examples show how the same infrastructure could support different needs without requiring a universal disability profile.

Vision and object identification

A tactilely locatable marker on storage, equipment, or a public exhibit could open structured descriptions readable by a screen reader or refreshable braille display. User-selected large text and audio could supplement physical labeling. Personal labels could distinguish otherwise similar household objects.

The marker must first be findable; a QR image alone does not solve that problem. Placement, NFC discovery, phone compatibility, glare, and orientation need testing with blind and low-vision users. This is not reliable identification of unknown substances, medicine, or live hazards. Public labeling should remain available without a personal account.

Deaf and hard-of-hearing access

A service counter, exhibit, or meeting space could offer written instructions, captioned media, communication options, or a request for a text-based interaction. Approved sign-language video could be included where users want it and qualified contributors produce it.

Captions, written language, and sign language meet different needs. Opening a page does not provide live interpreting, accessible alarms, hearing assistance, or emergency notification. Those require separate services and equipment.

Deafblind and multiple sensory access

An appropriately placed tactile marker could lead to structured text usable with a person's established access technology. Staff could find agreed communication procedures through a separately authorized route.

The interaction must be designed with the particular user; audio and large print alone are not a complete alternative. Device handling, tactile discovery, braille compatibility, and availability of human assistance are central evaluation questions.

Communication and AAC

A table, activity station, or service point could open a context-specific vocabulary page, communication board, or user-chosen way to express "yes," "no," "more time," "stop," or "help." Where supported, a link could open an existing communication tool rather than recreate it.

ASHA describes augmentative and alternative communication (AAC) as multimodal and emphasizes individualized assessment. [4] A connected resource should complement a person's established communication system. It must preserve refusal and free expression; preselected choices must not become the only things a person is allowed to say. Deep links and device integrations require separate implementation and testing.

Autism and sensory preferences

A venue entrance could offer a preview of the space, what will happen next, available quiet areas, and ways to request an adjustment. A task marker could open an optional visual sequence or familiar wording chosen by the person.

Sensory needs and preferences vary. Avoid forced audio, surprise animation, behavioral scoring, and automatic assumptions about distress. A sensory preview describes the environment at a stated review date; it cannot guarantee how busy, bright, or loud a space will be when someone arrives.

Intellectual and developmental disabilities

Markers could support cooking preparation, sorting, hobbies, household tasks, or participation in a community program through concrete wording, familiar images, and adjustable pacing. A person could choose a short reminder or a more detailed sequence.

The design should respect adult identity and supported decision-making. Completion buttons represent a report or interaction, not proof of competence, compliance, or safety. High-risk activities require their own qualified supervision and controls.

Brain injury, executive function, and cognitive fatigue

A physical cue could open a personally chosen checklist, orientation reminder, or resumable sequence at a desk or doorway. It could reduce the need to navigate multiple menus before reaching an agreed resource.

This is a hypothesis about information access, not a claim to rehabilitate memory or treat brain injury, ADHD, or another condition. Progress persistence, reminders, and shared access would need development and explicit choices about storage. A confusing prompt or excess notification can add burden rather than remove it.

Dementia support and aging in place

An activity object could open familiar, permission-cleared content. Household locations could offer optional routine cues, and staff stations could expose current non-clinical activity instructions.

Consent, changing preferences, supported use, and content review matter throughout. Do not equate silence or lack of interaction with incapacity or distress. The system must not be presented as wandering detection, a safety monitor, a memory treatment, or a substitute for human care.

Mobility, dexterity, pain, and fatigue

A reachable touchpoint could open instructions or a service request without requiring someone to approach a distant desk, manipulate a heavy binder, or type a long address. Interfaces could support keyboard, voice-control, switch, and other established device input methods.

NFC alignment and camera use can themselves be difficult. Provide alternatives, test seated reach and mounting, and avoid interactions that require precise dragging or sustained holding. Remote actuation of doors, appliances, or mobility equipment is a separate, higher-consequence integration.

Independent living and household participation

A laundry area, storage shelf, front door, or shared kitchen could connect to user-approved instructions, object descriptions, or optional preparation lists. Shared households could maintain common resources while leaving personal preferences private.

Examples should start with low-risk tasks. Do not infer that someone has turned off equipment, eaten, taken medicine, or left safely because they pressed a button. Critical instructions need a usable physical fallback and an identified owner.

Education and transitions

Classroom materials, lab models, library objects, or campus locations could expose accessible explanations, alternative formats, task sequences, and preparation information. The connection could remain useful as an item moves between settings.

Teachers and learners would need control over content and sharing. Avoid public student identifiers or disability labels, and keep protected education records in authorized systems. A marker does not supply an individualized education service or establish that an accommodation is effective.

Supported employment and workforce access

A workstation could provide approved setup instructions, task breakdowns, accessible quality references, or a chosen help path. Job coaches and workers could revise wording together as tasks change.

Usefulness should be measured through access, comprehension, confidence, and participant preference. Do not turn the workflow into covert productivity monitoring or use slower interaction as a measure of ability. The technology cannot certify competence or replace machinery safeguards and workplace supervision.

Public spaces, transport, and wayfinding information

Entrances and service points could expose reviewed information about accessible entrances, elevators, toilets, service desks, boarding processes, or known temporary changes. A museum or recreation site could offer layered interpretation and participation options.

Static location context is distinct from navigation. Real-time routing, vehicle arrivals, elevator outages, obstacle detection, and safe street crossing require authoritative data or specialist systems. Provide review dates and a human verification route; do not infer continuous position from a scan.

Healthcare access and rehabilitation education

A waiting area, therapy tool, or discharge education kit could connect to approved general instructions, accessible appointment preparation, or questions someone wants to bring to a professional. A provider could maintain versions of general educational resources.

Patient-specific treatment, dosing, exercise prescription, clinical monitoring, and decision support need separate clinical, privacy, safety, and regulatory evaluation. The initial scope should not contain health records or make health-outcome claims. Calling a feature "non-clinical" does not settle its regulatory status. [6]

Assistive equipment lifecycle and lending

Wheelchairs, walkers, communication devices, adapted tools, or loan kits could link to the correct manufacturer manual, approved cleaning guidance, repair contacts, or authorized service records. A lending organization could explore identity continuity across checkout, return, refurbishment, and reassignment.

Public product guidance and private borrower records need separate access. Manufacturer instructions remain authoritative; a service history is not a safety certification. Ownership transfer must revoke earlier access, remove personal configuration, and preserve only records the new custodian is entitled to receive.

Support coordination and personal preferences

A person could choose to share limited communication preferences or how to request assistance. Authorized staff could reach current operational resources at the location where a handoff occurs. A support request could carry only the context needed for an agreed response.

Profiles, delegated permissions, and delivery acknowledgments are proposed capabilities, not established by the current demonstration. No disability, diagnosis, home address, or emergency contact should become public simply because a marker is visible. Wearable markers require especially careful consideration of stigma, coercion, loss, and unwanted disclosure.

4. What exists and what must be built

This assessment is based on repository materials reviewed on September 27, 2026. It is a source review, not a production audit or user study.

- **General platform foundation:** documented NFC/QR entry patterns, managed destinations, a structured connected-content schema, and separate save/publish inputs. These offer reusable building blocks; the schema reviewed is product-oriented, not an assistive workflow engine.
- **Concept demonstration:** an existing care proposal shows leaving-home, activity, supported-work, and help scenarios. Its interface explicitly says that nothing is recorded. It demonstrates an interaction idea, not delivery of support or persistent task state.
- **Configuration and design work:** approved materials, marker placement, readable content, accessible media, physical fallback instructions, and ownership of revisions must be created for each context.
- **New product work:** user-controlled presentation preferences, accessible authentication, safe delegated access, resumable routines, reliable support acknowledgments, offline resources, and integrations require specification, implementation, and validation before being offered.
- **External validation:** compatibility with assistive technology, participant usability, operating procedures, privacy review, and any regulated intended use require evidence specific to the implementation.

The source basis includes the platform documentation on NFC and QR, standard and verified taps, experience management, and evidence and maturity; the repository's connected-content schema; and the internal care concept demonstration. No customer partnership or deployment is inferred from those materials.

5. Accessibility is an end-to-end requirement

WCAG 2.2 supplies a web accessibility baseline, including keyboard operation, text alternatives, contrast, reflow, captions, visible focus, target size, and accessible authentication. It does not meet every individual need or establish that a physical marker is usable. [2] W3C's cognitive accessibility guidance adds useful design considerations such as clear purpose, understandable instructions, predictable interactions, and help recovering from errors. [3]

For this proposed product, evaluate the complete journey: finding the marker, reaching it, opening the experience, understanding the content, expressing a choice, returning after an interruption, and obtaining help. A technically accessible page behind an unfindable label has not solved the problem.

Offer a short default path with additional detail on request. Let people change presentation without losing their place. Avoid mandatory accounts for public instructions. Make stopping and declining as understandable as continuing. Keep human-help options available when a screen, device, or connection fails.

Include disabled people in design and evaluation, with compensation and their usual access methods. W3C recommends combining user involvement with conformance evaluation. [5] Automated checks and a successful demonstration are useful evidence but cannot establish accessibility for every user. The HTML edition is the primary reading format for this publication; its companion PDF has not been certified for PDF/UA conformance.

6. Privacy, choice, and trust

The safest early pattern is a public resource about an object or place, with no individual profile required. If personalization becomes necessary, store the smallest useful preference, such as a chosen language or presentation mode, rather than collecting a diagnosis as a shortcut.

A visible marker should contain a reference, not private records or an access credential. Knowing its address must not authorize access to personal information. Separate the person using a resource, someone assisting them, the content editor, and the organization administering the system. Delegated access needs defined scope, expiration, revocation, and review.

Public resources and restricted actions should have different failure behavior: unavailable authorization should block private access while leaving appropriate public help available. A lost marker, shared device, expired session, copied link, or organizational transfer must not expose previous users' data.

Do not build disability inference, advertising audiences, or staff performance rankings from assistive interactions. Establish purpose, retention, deletion, and access rules before collecting events. Aggregate counts can still disclose patterns in a small setting; collect less when a number cannot support a useful decision.

For healthcare use, HIPAA applicability depends on the organizations and data relationships involved, including covered-entity and business-associate roles. This paper makes no compliance claim. [7] Education,

child-facing, employment, and consumer settings also require a context-specific review of applicable obligations before personal records are introduced.

7. Reliability and the human-help boundary

Plan explicitly for a missing or damaged marker, a wrong destination, an obsolete instruction, no network, a flat battery, a failed login, and a person who cannot use the offered method. Each location needs an owner who can inspect, correct, or withdraw it.

Offline resources are a development proposal. If implemented, cached content should identify its version and review date, and sensitive material must not remain on shared devices without a deliberate policy. An old cached page should not silently present itself as current.

A proposed help workflow should distinguish "request prepared," "sent," "received," "accepted," and "closed." A button press must not say that help is coming without acknowledgment from the responsible service. Define staffed hours, response expectations, escalation, cancellation, and a fallback route before enabling notifications. Do not position it as an emergency or life-safety channel.

Physical trust also needs maintenance: labels can be moved, covered, damaged, or substituted. Use recognizable labeling, a readable destination, inspections, and a reporting path. Stronger tag verification cannot compensate for wrong placement or incorrect approved content.

8. Where AI could help

AI could assist an authorized editor with draft plain-language variants, translation drafts, content organization, or identifying missing information. Each output would need review by people qualified for the content and by intended users where appropriate. Source, reviewer, version, and approval should remain traceable.

The first pilot does not need generative AI in the participant experience. If later introduced, it should be restricted to approved material, disclose uncertainty, and provide a direct human route. It should not infer diagnosis, emotional state, capacity, medication choices, or emergency risk from interactions. Generated language must not silently replace someone's own communication or be treated as evidence of their intent.

9. A practical evaluation pathway

Begin with one optional, non-clinical task at a few controlled locations: for example, opening an activity setup guide or a workplace reference. Pair this with paid co-design involving people who would use it; a staff-only convenience test cannot establish disabled-user benefit.

Stage 1: discover the actual barrier. Observe the existing information path with permission. Establish whether the problem is retrieval, reading, communication, physical reach, outdated content, or lack of human support. Compare the connected approach with simpler alternatives such as improved signage or a printed card.

Stage 2: prototype the whole journey. Test real marker placement and participants' own devices or offered loan devices. Include more than one access method and the ability to decline. Use fictitious or non-identifying content. Document whose needs the prototype does not yet meet.

Stage 3: run a bounded evaluation. An initial proposed cohort of 8-12 compensated participants over 4-6 weeks can support formative learning; it is not a powered clinical study or representative proof. Choose participants around the task and access methods being evaluated. Agree the plan, consent process, support responsibilities, and any needed research oversight before recruitment.

Compare the current method and the prototype for the same low-risk task, varying order where practical. Measure successful access, ability to find help or stop, errors, recovery, time and effort, requested assistance, and user preference. Record the access setup and support provided so "success" is interpretable. Do not make speed or unassisted completion the only measure of value.

Stage 4: decide using pre-agreed gates. The following are proposed gates to refine with participants and the operating organization, not achieved results:

- Every tested public resource has an identified owner, review date, usable fallback, and a way to report errors.
- Private information is not exposed in any planned shared-device, copied-link, lost-marker, or revoked-access test.
- Each participant can stop and locate the agreed help route with their usual support; unresolved access failures block expansion for that workflow.
- At least 80% of observed low-risk task trials reach the intended resource, with support level recorded and failures reviewed individually. This provisional engineering target does not override an excluded participant's needs.
- Participant feedback identifies a worthwhile improvement over the existing method, and the organization can maintain it without creating excessive burden.

Stop or redesign after unintended disclosure, distress linked to the workflow, misleading safety expectations, persistent inaccessible steps, or unowned content. Report negative findings, withdrawals, and assistance required alongside successes. A small favorable pilot supports a next iteration, not claims about clinical effectiveness or all disabled people.

10. Delivery and commercial implications

Potential purchasers include venues, employers, education providers, equipment lending programs, rehabilitation organizations, and disability-service organizations. The user of the support may not be the buyer. Procurement priorities must not displace the person's agency or require them to accept monitoring as the price of access.

A plausible service combines physical design and placement, managed resources, accessible content production, staff training, and maintenance. The recurring value would be keeping useful information current

and reachable. Selling markers without funding those responsibilities would leave the central problem unresolved.

Budget for user research and compensation, accessible media, translation review, device alternatives, placement testing, content ownership, support coverage, replacement materials, security, and integration maintenance. Reimbursement, procurement eligibility, cost savings, and willingness to pay remain questions to investigate, not established facts.

The first commercial package should specify a bounded task, approved content, included access modes, exclusions, an operating owner, and acceptance criteria. Later extensions could include equipment lifecycle records or user-controlled personalization once their additional requirements are met. Clinical decision support, emergency response, and equipment control belong on separate development and review paths.

11. Conclusion

State of Stick could make physical objects and places dependable starting points for accessible information and chosen support. Its strongest contribution is continuity: the same physical reference can keep connecting someone to maintained context as content, equipment, staff, and circumstances change.

That potential spans far more than one care setting. It also depends on doing the ordinary work well: finding the marker, opening the resource, understanding it, having choices, protecting privacy, maintaining content, and reaching a person when needed. The next step is to establish where this approach improves a real task for real users, then build only the additional capabilities justified by that evidence.

12. Sources and publication note

This is a company-authored white paper, version 1.0, dated September 27, 2026. It is not peer-reviewed research, a clinical study, or a representation of endorsement by the organizations cited. External references were reviewed for this edition; application designs, priorities, and proposed pilot thresholds are State of Stick's synthesis.

1. [World Health Organization: Assistive technology](#). Definition, scope, and global need; not market sizing for this platform.
2. [W3C: Web Content Accessibility Guidelines \(WCAG\) 2.2](#). Web accessibility requirements; not certification of this implementation.
3. [W3C: Making Content Usable for People with Cognitive and Learning Disabilities](#). Supplemental cognitive accessibility guidance.
4. [American Speech-Language-Hearing Association: Augmentative and Alternative Communication](#). Multimodal communication and individualized assessment.
5. [W3C WAI: Involving Users in Evaluating Web Accessibility](#). User involvement alongside standards evaluation.
6. [U.S. Food and Drug Administration: Policy for Device Software Functions and Mobile Medical Applications](#). Intended-use and software-function review; no product classification asserted here.
7. [U.S. Department of Health and Human Services: Covered Entities and Business Associates](#). Scope of HIPAA roles; no compliance finding asserted here.

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