From Stone and Thread to Shared Intelligence

Fixed W0-010 release

Part VI - The Invitation: A Global Network of Existing Capabilities

A Credit-Card-Sized Starting Point for Local Making and Global Participation

Benny (Yan) Liao - Founder, HSIMC
W0-010 · P3-F English Master · 12 November 2026

Human Authority · Local Capability · Global Participation
No One Left Behind in the GenAI Physical Era

Part VI at a glance

Parts I-V built the argument step by step. Part I described the distance between a generated answer and a verified physical outcome. Part II showed that useful participation can begin with materials, tools and skills people already have. Part III defined a collaboration model around people, Authority, Tools, Resources, Work and Evidence. Part IV turned that model into an engineering path that allows cloud simulation, hardware design, local making and reference-board validation to proceed in parallel. Part V asked how useful value should be measured without counting the same benefit several times.

Part VI asks the final question: **how does this become a global network that people can actually join?**

The answer is not to build one giant factory, one closed app, one universal robot or one central company that owns every capability. The opportunity is to let existing capabilities become easier to describe, request, combine, verify and reuse - while keeping the people who own or operate those capabilities in control of their participation.

That network can include a person with a sewing machine, a print shop, a warehouse, a UWB engineer, a device maker, a cloud developer, a hotel operator, a logistics company, a university, a standards expert, a global AI platform, or a manufacturer with an established supply chain. The contribution of each participant may be very different. What makes the network coherent is not uniform ownership. It is a common way to state:

- what capability is available;

- under which conditions it can be used;
- who has Authority to commit it;
- what result is expected;
- what evidence proves completion;
- what value and cost were created;
- which version another team can reproduce.

This Part develops that invitation in three chapters.

Chapter 16 describes an open network of complementary capabilities. It explains why HSIMC aims to complement model, cloud, creative, device, manufacturing, logistics and local-service ecosystems rather than replace them. It also defines a low-barrier participation unit: one capability, one accountable owner, one result and one evidence method.

Chapter 17 explains the route from a successful reference result to a shared specification. It deliberately distinguishes a local Profile or HSIMC reference method from a formal standard. A useful standard emerges only when repeated use, independent implementations, compatibility evidence, stakeholder need and a legitimate consensus process justify it. Formal international standardization belongs to recognized standards organizations and their procedures, not to a platform declaration.

Chapter 18 closes the English master with a practical invitation. A participant can bring a real task, a local capability, an engineering function, purchasing or sponsorship, or independent reproduction and review. The first objective is not to join a grand alliance. It is to complete one useful Work in a form that another authorized participant can understand and verify.

The invitation of this Part is therefore:

> **Bring your existing capability.**
> **Deliver one reproducible function.**
> **Measure one useful outcome.**
> **Make GenAI plans become real value - now, here, globally.**

Chapter 16 - An Open Network of Complementary Capabilities

16.1 Complement ecosystems instead of rebuilding them

The physical world already contains enormous capability.

Factories already have machines. Print shops already know materials, registration and finishing. Hotels already have staff, rooms, storage areas and service procedures. Airports already have baggage systems, carts, contractors and operational boundaries. Logistics companies already have vehicles, hubs, tracking systems and commercial terms. Universities already have laboratories, students and specialist equipment. Cloud companies already provide identity, storage, compute and collaboration. Creative ecosystems already provide design tools and content workflows. Device ecosystems already provide phones, cameras, sensors and operating systems. AI platforms already provide models capable of planning, coding, translation, analysis and increasingly sophisticated engineering support.

The challenge is not that all of these capabilities are absent.

The challenge is that they are difficult to combine quickly across organizational, technical and geographic boundaries.

A customer may know the desired result but not the available local machine. A model may generate a drawing but not know the exact fixture, material condition or operator constraint. A supplier may have the right equipment but no structured way to expose a narrow time window to an outside project. A hotel may have a person available for a luggage handover but no way for a travel assistant to know the exact service condition. A small maker may be able to produce a functional sample but have no software system through which a global engineering team can discover and trust that capability.

HSIMC therefore does not need to replace the ecosystems that already work.

Its proposed role is to help **connect a model-level plan to an accountable chain of local capabilities**.

This is complementary by design.

A model provider can keep improving reasoning, coding, engineering and multimodal capability. A productivity cloud can remain the place where a team stores and reviews files. A creative platform can remain the place where a designer develops artwork, packaging or content. A device ecosystem can remain the trusted interface through which a user scans, taps, measures or authorizes. A manufacturer can keep its own ERP, machines and quality system. A logistics company can keep its fleet and operational platform.

HSIMC adds value only if it reduces the friction between them.

The OpenAI engineering signal

OpenAI's 3 November 2026 publication, *Accelerating engineering for the physical world*, describes work spanning mechanical and electrical engineering, simulation, specialized tools and end-to-end system design. It emphasizes the need to bring together mechanical designs, electronics, software and manufacturing requirements, and it invites collaboration to understand where these capabilities can make the biggest difference and what still needs to improve.

HSIMC treats that publication as an important external signal, not as an endorsement of HSIMC and not as evidence of an official partnership.

The complementary question is:

> **When a model can prepare, analyze or coordinate more of the engineering work, how does the result reach a real machine, a real material, a real operator and a real customer - under explicit Authority and with evidence?**

That is where local capability becomes strategically important.

The stronger models become, the more valuable a well-described real-world interface can become. A machine that is difficult for software to understand remains isolated. A workshop whose capability is documented with clear conditions can participate in more workflows. A local operator who can return structured evidence can become part of a distributed engineering team without becoming a software company.

The MCP signal

The 28 July 2026 Model Context Protocol specification introduced a stateless protocol core. At the protocol layer, requests can be self-describing, and servers no longer need hidden session state merely to understand which protocol context is being used. Applications that need state can still use explicit handles and persistent business records.

This is important because it reduces the architectural pressure to force all collaboration into one long-lived connection.

A client can request a tool in one place. Another authorized client can later refer to the same Work, Resource, version or operation through explicit identifiers. A server can expose a tool or resource without pretending that the underlying factory, person or asset is stateless.

The physical world remains stateful. The protocol can become easier to route and scale.

That combination supports a network in which different teams can participate at different times without depending on one hidden conversation history.

Complementarity should be visible in the Work

A collaboration is genuinely complementary when each participant can identify a distinct contribution.

For example, a functional card prototype may involve:

- an AI model helping draft a pattern and test plan;
- a creative tool producing artwork;
- a local print shop producing registration features;
- an embroidery workshop placing conductive thread;
- an electronics provider supplying a module;
- a T736 or another local compute node running an inspection adapter;
- a remote engineer reviewing image or electrical evidence;
- a customer accepting the result;
- a document space preserving the versioned package.

No participant needs to own the entire stack.

The contribution becomes valuable because it is **composable**.

The same principle applies to movement. One party may own the baggage. Another may provide airport transport. Another may provide hotel storage. Another may provide final delivery. A QR or NFC entry may help the traveler express intent. A model may explain options in the traveler's language. A local operator still has to accept the final Work.

The network is strongest when every link can answer:

What did I contribute? Under what Authority? For which Work? What result did I produce? What evidence did I return? What did I receive in return?

16.2 One capability is enough to enter

A global network often becomes inaccessible because the entry requirement is too large.

A small producer is told to install an enterprise platform, expose an API, build a digital twin, integrate a marketplace, provide a full product catalogue and accept standardized commercial terms before the first useful collaboration can occur.

That approach excludes precisely the people and businesses that may hold valuable local capability.

HSIMC proposes a smaller entry unit.

A participant can begin with **one capability note**.

A useful capability note should answer six practical questions:

1. **What can you do?**
2. **Where can you do it?**
3. **When is it available?**
4. **Who is authorized to accept Work?**
5. **What result can another party inspect or accept?**
6. **What is the expected cost, time or participation condition?**

This can be enough to begin a real conversation.

The structured system can grow around the Work rather than demanding that the participant understand the entire architecture first.

From capability note to Capability Profile

If a capability proves useful, the note can become more structured.

A Capability Profile may include:

- provider identity;
- responsible contact or role;
- location or service area;
- input types;
- output types;
- versioned process description;
- accepted units and tolerances;
- machine / tool / material Profile;
- preparation requirements;
- Authority boundary;
- booking or availability rule;
- expected lead time;
- evidence returned;
- pricing or compensation method;
- known limits;
- safety or regulatory conditions;
- recovery or dispute path.

The provider does not have to expose every internal detail.

A machine shop may reveal only that a specific process can be provided within a tolerance and size range. A hotel may reveal only that luggage storage and an accepted delivery window are available. A person may expose a two-hour service window without exposing their entire calendar. A manufacturer may publish a capability Offer without exposing inventory quantities until a qualified Work request exists.

Discoverability does not require total transparency.

People without APIs can still participate

A Capability Profile does not imply the provider must run an MCP server.

The provider can interact through:

- a card or QR/NFC entry;
- a mobile web page;
- an email or message translated into structured fields;
- a local operator interface;
- a partner organization;
- an HSIMC assistant;
- an existing ERP or service system through an adapter;
- eventually, a native MCP tool or Resource if that adds value.

The important point is not the transport mechanism.

The important point is that the Work becomes understandable, authorized and verifiable.

This is essential to the principle of **No One Left Behind in the GenAI Physical Era**. A network should not require a participant to possess the most advanced software stack merely to contribute a physical skill.

Participation can be local while discovery is global

Physical capability has geography.

A laser machine in Kwun Tong cannot cut a sample in Boston without moving either the machine or the material. A hotel bell desk cannot receive a bag in another city. A local sewing machine cannot embroider a physical textile across the network.

But the **description, method, contract and evidence pattern** can travel globally.

This creates two different scaling speeds:

- physical capability scales through local partners and logistics;
- validated methods and interface Profiles can scale much faster through software and documentation.

A global network therefore does not mean every physical Resource serves every customer directly.

It means that a remote team can discover a relevant local capability, understand its conditions, send a versioned Work request, receive evidence, and - where appropriate - reproduce the same method through another local provider.

A capability can belong to more than one ecosystem

A local printer may serve packaging, electronics, exhibitions, education and hospitality.

A UWB team may serve mobility, warehouse tracking, tourism, robotics and accessibility.

A T736-based node may act as an engineering reference board in one Work, a local interface node in another, and a portable compute node in a third.

The capability should not be trapped inside one vertical label.

This is one reason HSIMC uses a Resource / Capability / Work model rather than a permanent seller category.

A person is not permanently a supplier. A company is not permanently a customer. Roles can change by Work.

That is an application-level participation model. It is distinct from the statelessness of MCP at the protocol layer, but the two ideas complement each other: **explicit context makes changing participation easier to represent without relying on hidden session assumptions.**

16.3 Participation must create fair reasons to stay

An open network fails if participation is easy but value distribution is opaque.

People will not continue to contribute equipment time, design, local labour, test data, customer access or risk unless they can understand what they are receiving and what they are giving up.

A useful Work therefore needs more than a technical acceptance result.

It should also make visible:

- who contributed cash;
- who contributed unpaid time;
- who provided equipment or space;
- who accepted operational responsibility;
- who contributed intellectual work;
- who gained a reusable method;
- who earned revenue;
- who gained access to a new customer or market;
- who carried a new safety, maintenance or support burden;
- which rights apply to future reuse.

Part V introduced the principle of avoiding double counting. Part VI applies the same discipline to partnership.

A network cannot claim the same contribution as the exclusive achievement of every participant.

Contribution rights should travel with the Work

The Work record can become the natural place to state contribution rights.

For example:

- a maker may allow the sample result to be published but keep the fixture design private;
- an engineer may allow an adapter to be reused under specified terms;
- a customer may allow anonymized performance data but not images of the site;
- a university team may require attribution;
- a sponsor may fund a public reference implementation;
- a commercial partner may require a defined exclusivity period;
- a local operator may require payment for every execution even if the software method is open.

There is no need to force every collaboration into one intellectual-property model.

The requirement is that reuse rights are not left implicit.

Five participant roles can coexist in one Work

A practical global initiative can invite at least five kinds of contribution:

1. **Problem owner** - brings a real need and acceptance condition.
2. **Local capability provider** - brings people, space, equipment, material or service.
3. **Engineering / model contributor** - brings software, analysis, design, sensing or integration.
4. **Buyer / sponsor** - funds the Work, the infrastructure or the public reference result.
5. **Independent reproducer / reviewer** - tests whether the result can be repeated and whether the evidence is sufficient.

The same organization may hold several roles, but the roles should still be distinguishable.

A project becomes more trustworthy when the person who designed the solution is not automatically assumed to be the only person who can verify it.

Goal 17 is a useful frame, not a badge

United Nations Sustainable Development Goal 17 explicitly calls for multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources. It also emphasizes data, monitoring and accountability.

That is highly relevant to a network of complementary capabilities.

But relevance is not achievement.

A partnership should be able to show actual commitments, actual contribution, actual outcomes and actual learning.

For HSIMC, the strongest possible Goal 17 story is therefore not a partner-logo page.

It is a chain of completed Work in which different participants can show how knowledge, technology, resources and payment moved through an accountable interface.

> **The value of partnership is an executed interface.**

Chapter 17 - From Reference Results to Shared Standards

17.1 A successful demo is not yet a standard

The word *standard* is attractive because it suggests stability, compatibility and scale.

It is also easy to misuse.

A working prototype is not a standard. A company specification is not automatically an industry standard. A widely used API is not automatically an International Standard. A test passed once in one laboratory does not establish universal compatibility.

This white paper therefore uses a deliberate progression.

A capability may mature through the following levels:

Reference result → Versioned Profile → Conformance method → Multi-implementation compatibility → Shared specification → Formal standardization, where justified

Each level adds evidence and participation.

Reference result

A reference result is a reproducible example under known conditions.

For `locate_marks`, a reference result might include:

- a versioned marker definition;

- a known input image;
- an expected output;
- an algorithm version;
- a test fixture or calibration reference;
- acceptance criteria;
- a receipt showing the result.

A reference result is useful because it gives another team something concrete to reproduce.

It is not yet a claim that every camera, every substrate, every lighting condition or every target device will behave the same way.

Versioned Profile

A Profile defines a supported subset or configuration.

For a physical interface it may specify:

- connector and pin assignment;
- voltage and current constraints;
- mechanical envelope;
- protocol or message format;
- timing assumptions;
- required safety state;
- recovery procedure;
- known exclusions.

For a process it may specify:

- accepted materials;
- machine family;
- fixture version;
- setup steps;
- inspection method;
- tolerances;
- evidence output.

Profiles allow different implementations to be compared without pretending that every optional capability must be supported.

This is especially important for T736. Part IV described a minimum common route - power, recovery, maintenance UART, a chosen network path, USB Host and intentionally assigned expansion - while keeping other interfaces and electrical assumptions dependent on the actual BOM and board configuration. A Profile prevents a block diagram from becoming an unsupported promise.

Conformance method

A shared interface becomes more useful when there is a test method that determines whether an implementation satisfies the stated Profile.

A conformance pack may contain:

- test vectors;
- expected responses;
- required error behavior;
- timing limits where relevant;
- side-effect rules;
- recovery tests;
- Authority tests;
- version negotiation tests;
- evidence format requirements;
- negative tests for unsupported operations.

Conformance is not the same as quality certification for an entire product.

It answers a narrower question:

> **Does this implementation satisfy the requirements of this Profile under the specified test conditions?**

ISO's terminology similarly distinguishes conformity assessment as the process of determining whether something meets the requirements of a standard. Depending on the context, assessment can be performed by the supplier, purchaser or an independent third party.

Multi-implementation compatibility

The next step is not to add more documents. It is to observe whether independent implementations work together.

Two teams should be able to implement the same Profile without sharing hidden assumptions.

Useful evidence includes:

- team A client with team B server;
- team B client with team A server;
- different hardware adapters returning equivalent evidence;
- different local makers reproducing the same sample acceptance result;
- old and new versions interacting according to the documented compatibility policy;

- failure cases behaving in the agreed way.

A compatibility matrix can show what is actually known.

For example:

Profile	Implementation A	Implementation B	Implementation C	Evidence
Mark locate v1	Pass	Pass	Not tested	test pack R1
NFC URI entry v1	Pass	Pass	Pass	device matrix R2
UWB observation v0.2	Simulated	Physical reference	Not tested	separate evidence
T736 serial adapter v0.1	Documented	Not bound	Not bound	hardware evidence pending

This is more informative than the word *compatible* alone.

17.2 Shared specifications should grow from evidence

The objective of a shared specification is not to freeze innovation too early.

It is to stabilize the parts that multiple participants need to depend on.

A good candidate for shared specification usually has several characteristics:

- more than one participant needs it;
- multiple implementations are possible;
- ambiguity repeatedly creates integration cost;
- the interface is stable enough to document;
- independent testing is possible;
- versioning can be managed;
- the benefit of compatibility is larger than the cost of standardizing.

Examples may include:

- the fields required in a Capability Profile;
- the structure of a Work acceptance receipt;
- the distinction between operation receipt and fresh observation;
- an evidence status vocabulary such as Documented / Simulated / Physical Reference / Operational;
- a card or QR/NFC URI structure;
- a device adapter Profile;
- a reference test pack for a specific function;
- a minimum error and recovery behavior.

Keep business semantics separate from transport where possible

A shared Work contract should not unnecessarily depend on one network transport.

For example, the business concept of `work_id`, `resource_id`, `authority_context`, `operation_id`, `evidence_ref` and `acceptance_status` can exist whether the execution request travels through MCP, an HTTPS API, a local queue or a human operator interface.

MCP can be a powerful interoperability layer for AI clients and tools, but HSIMC business semantics should remain clear enough to survive protocol evolution.

This is another reason the 2026-07-28 MCP move toward explicit, stateless requests is strategically useful. The model can see and pass explicit handles rather than relying on hidden transport session state. The application can preserve the real-world Work independently.

Versioning is a governance function

A shared interface without version discipline becomes a source of risk.

Every Profile should define:

- version identifier;
- effective date;
- supported predecessor versions;
- migration notes;
- breaking vs non-breaking change rule;
- deprecation window where appropriate;
- test pack version;
- evidence schema version.

The MCP 2026-07-28 release itself provides a useful example of why this matters: it introduced major breaking changes alongside a formal deprecation policy so implementers could plan migration instead of discovering incompatibility during execution.

HSIMC can borrow the discipline without pretending to be the MCP standards process.

A physical adapter may need even slower change than software because replacement requires parts, labour, shipping and safety re-validation.

Negative results belong in the shared knowledge

Standardization is weakened when only successful tests are preserved.

A useful compatibility record should also show:

- which material failed;
- which camera did not meet the required latency;

- which NFC tag could not be rewritten;
- which connector overheated;
- which device firmware broke a previously working function;
- which hotel workflow caused repeated missed handovers;
- which language version created user confusion;
- which economic assumption failed under real pricing.

Failure is not noise.

Failure defines the boundary of the current Profile.

This is one reason Evidence is a first-class HSIMC concept.

17.3 From shared specification to formal standardization

Formal standards development should be treated with respect.

ISO explains that standards development begins in response to a market or stakeholder need, is carried out by relevant experts and stakeholders, and is consensus-based. ISO's procedures explicitly state that consensus requires substantive objections to be heard and addressed; consensus does not necessarily mean unanimity.

That process is very different from a company publishing a PDF and calling it a global standard.

HSIMC should therefore use precise language.

Possible labels include:

- **HSIMC reference method**;
- **HSIMC Capability Profile**;
- **shared implementation guide**;
- **reference test pack**;
- **interoperability profile**;
- **consortium specification**, if a real consortium approves it;
- **industry proposal**, if submitted into a wider process.

The phrase **International Standard** should be reserved for the recognized standardization process that produces one.

A practical standardization ladder

A useful ladder is:

Level 0 - Observation
One team records a problem and a result.

Level 1 - Reference method
The team publishes enough information for another team to reproduce it.

Level 2 - Versioned Profile
Scope, required fields, interfaces, limits and evidence are defined.

Level 3 - Conformance pack
A test method distinguishes conforming and non-conforming implementations.

Level 4 - Independent implementations
Multiple teams implement the Profile and publish compatibility evidence.

Level 5 - Shared specification
Multiple stakeholders jointly maintain the Profile under an explicit governance process.

Level 6 - Formal standardization, when justified
A recognized standards body or appropriate industry standards process considers the work through its own procedures.

This ladder protects both speed and credibility.

A local team can move quickly at Levels 0-3. A wider ecosystem can join at Levels 4-5. Formal standardization can begin only when the need and stakeholder base justify the additional process.

Open reference does not require open everything

A reference implementation can be public while a production implementation remains proprietary.

A test vector can be open while a supplier keeps its manufacturing method private.

A Profile can describe an electrical interface without revealing a company's internal PCB.

A Work contract can expose acceptance conditions without exposing a customer's private operational data.

The objective is not compulsory openness.

The objective is enough shared information to support safe interoperability and reproducible acceptance.

Global relevance may still require local options

ISO's directives explicitly recognize that a globally applicable solution may require justified options to address legitimate differences across markets.

The same principle is important for HSIMC.

A luggage handover method may need different hotel practices in Hong Kong, Bangkok or Boston. A power interface may need different certified components. A mobility application may face different regulatory boundaries. A local maker may use different machinery while still meeting the same output specification.

A strong Profile distinguishes:

- what must remain invariant for interoperability;
- what may vary locally;
- how that variation is declared;
- what evidence is needed for the local option.

That is how a network can be global without erasing local capability.

> **Shared standards should make local differences legible, not invisible.**

Chapter 18 - An Invitation to Make AI Real

18.1 Five ways to join

A global initiative becomes real only when participation produces Work.

HSIMC therefore does not need a participant to begin by signing up for a large platform relationship.

A person or organization can begin in one of five ways.

1. Bring a real task

A real task is one where someone cares about the result.

Examples include:

- make a small batch of a versioned card or functional interface;
- inspect a printed or embroidered sample;
- move a defined object between two local points;
- prepare a T736 peripheral adapter;
- test a UWB observation Profile in a specific space;

- clear an airport-style trolley handover point in a simulated or authorized real setting;
- arrange an accepted luggage handover at a hotel pilot;
- adapt an existing wheelchair or cart only within a properly authorized engineering test scope.

The task should state who will accept the result and what evidence is sufficient.

A problem without an acceptor is still research.

Research is valuable, but it should be labelled honestly.

2. Bring a local capability

A local capability can be:

- a sewing or embroidery machine;
- a printer;
- a laser machine;
- a CNC machine;
- a test instrument;
- a storage area;
- a delivery route;
- a vehicle;
- a UWB kit;
- a camera;
- a T736 board;
- an engineering skill;
- a translation skill;
- a person who can inspect, pack, deliver or accept.

The first question is not "How advanced is it?"

The first question is:

> **What useful result can this capability produce, under what conditions, and who can verify it?**

3. Bring an engineering or model function

Software and model contributors can join before final hardware exists.

Useful contributions include:

- schema and contract design;

- simulation;
- test generation;
- image inspection;
- CAD review;
- electronics review;
- device adapters;
- error handling;
- multilingual interaction;
- data normalization;
- scheduling;
- evidence analysis;
- reproducibility tooling.

The strongest contribution is not a demo that only works in one developer's environment.

It is a versioned function another team can execute against the same contract.

4. Buy or sponsor a useful result

A network needs buyers and sponsors as much as it needs engineers.

A company may buy a local prototype. A hotel may pay for a service test. A manufacturer may sponsor an adapter for an existing machine. A foundation may sponsor accessible participation. A technology company may sponsor a public reference test. A government or university programme may sponsor a trial under its own procurement and governance requirements.

Sponsorship should not automatically buy control over every contributor or every later use.

The Work should state what the funding covers, what result becomes public or private, and what reuse rights remain with contributors.

5. Reproduce and review

Independent reproduction is one of the most valuable forms of participation.

A reviewer can ask:

- Can I obtain the same versioned package?
- Can I reproduce the stated result?
- Which assumptions were missing?
- Which evidence was insufficient?
- Did the result depend on one specific person?
- Which local change was required?
- Did the economic or ESG claim survive the second site?

A network grows stronger when a second team can improve the first team's method instead of merely believing it.

18.2 Begin with one Work, then earn the right to scale

Large visions are easy to state.

Global execution networks, intelligent manufacturing, autonomous logistics, accessible mobility, local-to-global production and GenAI-native commerce all sound important.

The discipline is to begin with a Work small enough to finish and rich enough to teach the network something.

A useful first Work has:

- a named requester;
- a named provider;
- one or more Resources;
- a clear Authority boundary;
- a versioned input;
- a result condition;
- a realistic time window;
- direct cost recording;
- a simple evidence method;
- an acceptor;
- a known recovery path.

The first 30 days: make the interface real

The first phase should answer:

- Is the problem real enough that someone cares about the result?
- Can the capability be described clearly enough for another person to request it?
- Is Authority explicit?
- Can a useful versioned sample or service result be completed?
- Can cost and time be recorded?
- Can the evidence be preserved and retrieved?

The first phase does not need full automation.

A human operator can remain in the loop.

Automation should enter where repeated evidence shows that it improves the outcome.

Days 31-60: reproduce and compare

The second phase should attempt at least one form of independence:

- another engineer uses the same contract;
- another device runs the same function;
- another maker reproduces the sample;
- another location implements the same service pattern;
- another client retrieves the same Work and evidence.

Differences should be documented, not hidden.

This is where a reference result begins to become a Profile.

Days 61-90: decide whether to scale, standardize or stop

The third phase should compare:

- actual cash result;
- actual released capacity;
- user/service outcome;
- environmental/material effect;
- governance and evidence quality;
- repeatability;
- support burden;
- next-site adaptation cost.

The decision can then be honest.

The Work may be ready to scale.

It may need another engineering iteration.

It may be valuable only in a narrow local niche.

It may not be worth continuing.

A network that can stop weak ideas is more credible than a network that converts every pilot into a success story.

The first visible global test

One of the strongest tests for HSIMC is simple:

> **Can a second team, in another network or location, receive a versioned package and complete the agreed function without depending on the original conversation?**

This is where Stateless MCP, versioned files, explicit Resource identities, Authority and Evidence become more than architecture words.

They become a test of whether knowledge can travel while responsibility remains clear.

The same test can be applied to the card-phone / T736 path:

cloud simulation → remote reference board → frozen version → shipment → local binding → continued local execution

The shipped hardware is only one stage in the Work.

The more important asset is the combination of Profile, software, evidence, recovery method and local Authority that lets the hardware continue to be useful after shipment.

18.3 Make AI real - without leaving people behind

The physical era of GenAI can develop in more than one direction.

One direction concentrates capability into increasingly large organizations, increasingly specialized infrastructure and increasingly automated systems. That can produce extraordinary efficiency.

Another direction uses the same intelligence to make smaller existing capabilities easier to discover, combine and improve.

The two directions do not have to be enemies.

Global scale and local participation can complement each other.

A powerful model can help a small workshop understand a drawing. A cloud platform can help preserve the version. A creative tool can help prepare the interface. A local machine can make the sample. A person can inspect it. A sensor can return evidence. A global engineering team can improve the design. A second maker can reproduce it. A customer can accept the result.

The opportunity is not that every household becomes a semiconductor fab.

The opportunity is that **more people can contribute a useful, bounded function to a sophisticated product or service**.

That is a different kind of industrial participation.

It is closer to a network of capabilities than to a hierarchy of factories.

No One Left Behind is a design requirement

The phrase should create practical questions.

Can a person join without speaking English?

Can a participant contribute without owning expensive compute?

Can a small workshop join without deploying an enterprise API?

Can an older worker use a card, QR or simple web interface instead of learning a developer console?

Can a person with a disability express Authority and receive a service in an accessible way?

Can a local maker see what will be paid before accepting Work?

Can a contributor withdraw or limit reuse?

Can a buyer see the actual evidence rather than only a sustainability claim?

Can a worker's saved time create a benefit for that worker, not only for the organization?

Can a failed Work be reported without punishing the person who surfaced the failure?

If the network cannot answer those questions, it has not yet achieved the principle.

Local capability should remain local enough to matter

Global participation should not turn every contributor into an anonymous subcontractor competing only on price.

A local capability has context.

It may know the building, the machine, the customer, the language, the material, the neighborhood, the hotel, the route or the cultural expectation.

That context can be part of the value.

The purpose of a common Profile is not to erase local knowledge.

It is to make the transferable part explicit enough that local knowledge can be combined with global engineering.

Human Authority should remain visible as automation increases

As tools become more capable, the system may automate more planning, scheduling, inspection and execution.

That increases the importance of knowing:

- which person or organization authorized the automation;
- which Resource is being used;

- which constraints apply;
- which side effects are permitted;
- how the action can be stopped;
- who accepts the result;
- who is accountable when the result is uncertain.

A faster autonomous tool should not make Authority less visible.

It should make Authority easier to state and audit.

Evidence should make trust portable

Trust in physical work is often local and personal.

A customer trusts a particular operator. A factory trusts a particular technician. A hotel trusts a particular contractor. A maker trusts a familiar supplier.

The purpose of Evidence is not to replace those relationships.

It is to make part of that trust portable.

A second team can see:

- the version;
- the test;
- the result;
- the conditions;
- the responsible party;
- the known limits.

Portable trust makes global participation more practical without requiring blind centralization.

The credit-card-sized starting point returns

The white paper began with a familiar physical footprint.

That small rectangle was never the final product definition.

It is a symbol of a larger engineering idea:

make the entry small enough to understand, then let capability extend beyond the object.

A card can carry identity, a QR or NFC entry, artwork, a functional surface, a sensor or a connection to a larger compute node. It can point to a T736-based system, a machine, a hotel service, a material Profile, a local maker or a global engineering package.

The intelligence does not have to fit entirely inside the card.

The participation path can begin there.

The final invitation

HSIMC proposes a practical response to the GenAI physical era:

Do not begin by asking everyone to buy a new machine.
Begin by asking what capability already exists.

Do not begin by asking every small participant to build a platform.
Begin by defining one function that another party can request and verify.

Do not treat a model plan as a completed result.
Connect it to people, materials, machines, time, Authority and Evidence.

Do not call every reference method a global standard.
Earn interoperability through independent implementations, testing and consensus.

Do not measure value only in activity or publicity.
Measure the useful outcome, the cost, the distribution of benefit and the evidence.

And most importantly:

> **Bring your existing capability.**
> **Deliver one reproducible function.**
> **Measure one useful outcome.**
> **Make GenAI plans become real value - now, here, globally.**

That invitation can begin with stone, thread, a printer, a machine, a card, a piece of code, a warehouse, a trolley, a hotel, a reference board or one person's practical skill.

The starting point can be small.

The collaboration does not have to be.

Reference notes for Part VI

The following sources support the external context used in this Part. They do not imply endorsement of HSIMC.

1. **OpenAI - Accelerating engineering for the physical world (3 November 2026).** Describes AI-assisted mechanical/electrical engineering, simulation, cross-disciplinary coordination and collaboration around real engineering workflows.
   https://openai.com/index/accelerating-engineering-for-the-physical-world/

2. **Model Context Protocol - The 2026-07-28 Specification (28 July 2026).** Describes the stateless protocol core, explicit per-request context, routing headers, cacheable lists, authorization hardening, extensions and explicit state handles where applications need continuity.
   https://blog.modelcontextprotocol.io/posts/2026-07-28/

3. **United Nations - SDG 17: Partnerships for the Goals.** Includes multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources.
   https://sdgs.un.org/goals/goal17

4. **United Nations - Multi-stakeholder partnerships.** Describes Goal 17's role for public, public-private and civil-society partnerships.
   https://sdgs.un.org/topics/multi-stakeholder-partnerships

5. **ISO - Developing standards.** Explains that ISO standards respond to stakeholder/market need, are developed by experts through a multi-stakeholder process and are consensus-based.
   https://www.iso.org/developing-standards.html

6. **ISO/IEC Directives, Part 1.** Defines consensus as an essential procedural principle and recognizes that globally relevant standards may require justified options for legitimate differences.
   https://www.iso.org/sites/directives/current/consolidated/

7. **ISO Glossary - conformity assessment.** Defines conformity assessment as determining whether something meets stated requirements and distinguishes first-, second- and third-party assessment.
   https://www.iso.org/glossary.html

End of Part VI - The Invitation: A Global Network of Existing Capabilities