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Artificial Intelligence Standardization Requirements

ATTENTION:

UN/UNESCO	United Nations & United Nations Educational, Scientific and Cultural Organization
NATO/OTAN	North Atlantic Treaty Organization / Organisation du Traité de l'Atlantique Nord
G7 & EU	United States, Canada, France, Germany, Italy, Japan, The United Kingdom, European Union

PROBLEM

The absence of a standard, invariant AI evaluation metric renders uncertain cost, energy, and accounting analysis.

Output	AI procurement uses a vague/variable unit of measure (“token”).
Energy	Vendors’ AI Joule usage is not standardized and unverifiable.
Accounting	Without logical grounding, economic evaluation is unsound.

National AI metrics are needed for economic prudence and legislative integrity.
Machine and human-accessible metrics require standard units and common logic.

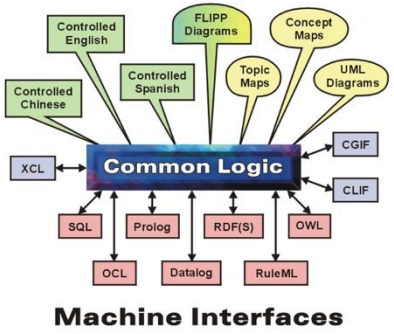
Reasonable assessments lead to accreditable, trustworthy AI evaluations.
Organizations require a leading, unifiable framework for sensible decision-making.

- *Our review also highlights a series of systemic flaws in current benchmarking practices*. EC-JRC
- *No consensus in theory or practice regarding how benchmark reporting should be standardized*. Stanford
- *Tokenization disparities pose a significant barrier to achieving equitable access*. Leibniz University
- *[Token] API pricing is an unreliable proxy for actual cost*. Microsoft

SOLUTION

Standardization of AI KPIs grant organizations sound cost, energy, and accountability analysis.

Shannon	Standard unit of uncertainty reduction
Joule	Energy required to reduce uncertainty
Common Logic	Verification logic for certainty
Controlled Language	API for language and logic



Machine Interfaces

Common Logic is the sole *de jure* first-order logic for AI evaluation. Without a defined lexicon, "plain language" compliance is unverifiable.

Controlled English can express the full semantics of Common Logic. Controlled Language must be created for sound evaluation of AI.

- *Even when data standards are developed, they are often not used or are overcome by changes in technology or missions.* NATO
- Move towards leveraging a more standard or interoperable representation of knowledge. US Army

NEED #1

Standard metrics for AI benchmarks' reduction of uncertainty, Using ISO-standard, invariant Units of Measure (not a 'token')

Shannon Information Content: Binary Entropy (Sh)
nat Information Content: Natural Entropy
nat / Joule $\log_2(e)$ Sh / W · s

Harmonized ISO Terminology	Unit Name	Example	ISO/IEC
Performance Efficiency			25002, 25010
Channel Capacity	nat/s @ % Load	10 nat/s @ 50% Load	80000-13
Energy Performance Indicators	nat/J/KB @ % Load	2 nat/J/KB @ 50% Load	50001, 25023, 21836
Energy Consumption / Energy Performance Baseline (EnPB)	nat/Watt @ % Load	10/50/90W @ 0/50/100%	21836, 50001
Resource Utilization	KB/MB/GB/TB	4.2GB disk, 13GB RAM	14756
Reliability – Maturity Functional **Correctness** **Process Specification**	% Task @ % Load	81% CA-AIQ @ 50% Load	25010, 14756, 25022, 24748, 25062
	nat/J @ % Load	10 nat/J @ 50% Load	""

NEED #2

Common Logic (CL) Controlled Language (CLCL)
for expression of common logic in any *formal language*.

CLCL-En	Common Logic Controlled Language: English (AKA CLCE)
CLCL-FOL	Common Logic Controlled Language; First Order Logic

The world needs an international specification for translatable logic and lexemes
for operational policy, legislative integrity, and sovereign intent.

Each specification should be able to describe itself in Common Logic and its linguistic implementation.
This enforces the viability of the specification over human and machine-based translation.

- *[When] standards are not developed with internally coherent logic, […] the result will be a standard that is simply unusable.* NATO
- *Reasoning is hampered by nonstandard terminology, differing methodologies, […] the choice of metrics and tests.* NIST
- *The purpose is to facilitate interchange of first-order logic-based information between systems.* ISO
- There are several key benefits that G7 leaders can achieve through successful RaC adoption. Think7

Thank you for your attention.

Contact

Jacob Friedman
jfriedman@permion.ai