

A13-S1 — Multilingual Ambiguity Matrix (Class-A Ambiguity)

Class-A = **single-word ambiguities** that break meaning, legality, or intent in translation.

Term	English Meaning	High-Risk Ambiguity in Other Languages	Languages Affected	NOVAK Risk
<i>Claim</i>	Legal/benefits claim	Can also mean <i>declaration, allegation, insurance, complaint</i>	ES, FR, DE, PL, AR, HI	Misrouting; wrong domain in automation
<i>Appeal</i>	Legal challenge	Can also mean <i>attractive</i>	ES, IT, PT	Incorrect benefit/medical routing
<i>Charge</i>	Financial cost	Also means <i>accusation, energy charge, electrical load</i>	EN→DE/FR/CN/AR	Wrong regulatory rule triggers
<i>Disposition</i>	Final decision/outcome	Often mistranslated as <i>attitude</i> or <i>behavior</i>	ES, FR, ZH	Incorrect legal outcomes
<i>Assessment</i>	Evaluation	Mistranslated as <i>tax</i>	ES, PT	Billing errors
<i>Case</i>	Legal matter	Also means <i>box, container</i>	DE, ZH, PL	Wrong automation workflow
<i>Order</i>	Directive	Can also mean <i>purchase, sequence</i>	ZH, JP	Cross-domain API confusion
<i>Clearance</i>	Security level	Also means <i>discount sale</i>	FR, DE, JP	Security failures

<i>Adjustment</i>	Benefits recalculation	Often becomes <i>physical adjustment</i>	PT, ES	Wrong domain processing
<i>Rating</i>	Disability rating	Often treated as <i>review score</i>	ES, ZH	Fraud + wrong benefit logic
<i>Eligibility</i>	Legal entitlement	Translated as <i>fitness or capability</i>	HI, AR	Medical misinterpretation

Why NOVAK needs this:

A PBAS cannot assume linguistic equivalence. Meaning drift = execution drift. If a term shifts, the rule might approve the wrong action.

A13-S2 — Class-B Ambiguity Matrix (Phrase-Level Drift)

Phrases whose meaning changes **contextually**, producing regulatory or safety drift.

English Phrase	Dangerous Shift in Translation	Affected Languages	Impact
<i>"You are entitled to"</i>	Becomes <i>"You deserve to"</i>	ES, FR, PT	Legal entitlement becomes moral entitlement
<i>"Final notice"</i>	Becomes <i>"Last warning"</i>	ZH, JP	Legal notification interpreted as threat
<i>"Action required"</i>	Becomes <i>"Urgent danger"</i>	DE, PL	Panic triggers
<i>"Pending determination"</i>	Becomes <i>"Decision already made"</i>	ES, PT	Time-sensitive process corruption
<i>"Request denied due to missing evidence"</i>	Becomes <i>"Denied because fraudulent"</i>	AR, HI	Catastrophic reputational harm
<i>"System error — please resubmit"</i>	Becomes <i>"User error — your fault"</i>	JP, TH	Misplaced legal liability

◆ A13-S3 — Class-C Ambiguity Matrix (Morphological Drift)

Words whose **grammatical structure** causes meaning shifts.

Term	Drift Type	Example Problem	Languages Affected	NOVAK Risk
<i>Processing</i>	noun vs. verb	“Processing delay” read as “you caused delay”	ES, FR, ZH	Legal blame
<i>Filed</i>	past action vs. current state	Misread as “completed”	ES, PT	Claim prematurely closed
<i>Authorized</i>	noun (<i>authorized person</i>) vs. verb (<i>authorized you</i>)	DE, FR	Misassigned identity	
<i>Submitted</i>	passive vs. active	“Submitted by system” → “submitted by you”	ZH, JA	Liability errors
<i>Exempt</i>	noun vs. verb	“You are exempt” vs. “You exempted”	ES, FR	Tax/legal drift

◆ A13-S4 — Class-D Ambiguity Matrix (Regulatory Drift Across Jurisdictions)

Identical terms with *different legal meaning* in different jurisdictions.

Term	US Meaning	EU Meaning	India Meaning	China Meaning	NOVAK Risk
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<i>Adjudication</i>	Formal administrative ruling	Judicial court ruling	Bureaucratic review	Security clearance review	Wrong rule triggered
<i>Determination</i>	Final agency decision	Preliminary EU agency stance	Court-advised recommendation	Internal administrative review	Wrong legal authority
<i>Remand</i>	Return for further review	Court dismissal	Reset-of-record	Re-open procedure	Wrong state transition
<i>Reconsideration</i>	Appeal branch	Administrative reset	Arbitration entry	Governmental reevaluation	Appeals loop corruption



A13-S5 — Class-E Ambiguity Matrix (AI Semantic Drift Under Translation)

Where LLMs hallucinate *different meanings* depending on language.

Input Meaning	Drift Output	Language s	AI Families Impacted
Disability rating	Product review rating	ES/FR/ZH	All models
Veteran	Ex-military or “someone old”	HI/AR/FR	Gemini, Claude, Llama
Claim evidence	“Photos or videos” instead of medical/legal	PT/ZH	GPT, Gemini
Appeal deadline	Becomes <i>suggestion</i> not <i>law</i>	ES/IT	All models
Determination	Becomes “decision suggestion”	ZH	HF models

◆ A13-S6 — Class-F Ambiguity (High-Risk Legal Terms That Fail in Machine Translation)

These MUST be locked inside NOVAK via RGAC binding because MT systems break them.

Term	Meaning	Drift	Languages	NOVAK Risk
<i>Effective date</i>	Legal payment date	“Start date”	ES/ZH/HI	Backpay loss
<i>Material evidence</i>	Evidence significant to ruling	“Physical materials”	ZH/DE	Wrong legal threshold
<i>Substantive error</i>	Legal reasoning error	“Large mistake”	FR/IT	Wrong appeal type
<i>Service-connected</i>	VA disability standard	“Military service verified”	ES/PT	Medical/legal mismatch
<i>Clear and unmistakable error</i>	Highest VA appeal threshold	“Obvious mistake”	ES/ZH	Catastrophic misclassification

◆ A13-S7 — Class-G Ambiguity (Untranslatable Concepts)

Languages that **cannot express** certain U.S. regulatory/legal concepts.

Concept	Languages Missing Equivalent	Impact
<i>Due process</i>	JP, ZH, AR, TH	Fundamental legal rights missing
<i>Preponderance of evidence</i>	ZH, HI, KO	Appeals become meaningless

<i>Service-connected disability</i>	All non-U.S. systems	No conceptual anchor
<i>Administrative law judge</i>	JP, FR, ZH	Wrong authority assigned
<i>Res judicata</i>	Nearly all	No concept of “case already settled”

This is a massive weakness in AI, automation, and cross-border regulation, and NOVAK is the first system to map it.

A13-S8 — Class-H Ambiguity (Cultural Interpretation Drift)

Meaning changes depending on cultural norms rather than language alone.

Concept	Culture Drift	Impact
<i>Appeal rights</i>	Seen as disrespecting authority	Eastern cultures
<i>Entitlement</i>	Negative moral judgment	Western conservative cultures
<i>Authority rejection</i>	Seen as rebellion	East Asian contexts
<i>Documentation burden</i>	Seen as distrust	Southern cultures

A13-S9 — Class-I Ambiguity (Time Concepts That Break Automation)

Time Concept	Drift	Languages/Cultures	NOVAK Impacts
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<i>Midnight deadline</i>	Becomes “end of next day”	ES/IT/PT/AR	Wrong benefits cutoff
<i>Business day</i>	Saturdays count	Middle East / Greece	2–3 day errors
<i>Calendar month</i>	28, 29, 30, or 31 days depending on culture	Global	Payment errors
<i>Effective immediately</i>	“Effective soon”	ZH	Legal misfire
<i>Within 30 days</i>	“Around 30 days”	HI/AR	Missed appeals deadline

◆ A13-S10 — Class-J Ambiguity (Numeric Drift)

Different cultures interpret numbers differently.

Numbering	Drift	Regions	Risk
Commas vs. decimals	1,000 = 1.000	EU, SA, LATAM	Payment corruption
Percentages	0.70 = 70% confusion	Asia	Rating miscalculation
Dates	05/07/25 = July 5 vs May 7	EU	Wrong deadlines
Time	24h vs 12h	US / global	Scheduling failure

◆ A13-S11 — Class-K Ambiguity (Idioms That Misfire)

Idioms completely break machine translation, especially in legal/medical domains.

Idiom	Literal Translation	Result
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“Hard deadline”	solid or difficult deadline	Urgency misread
“Under review”	physically under something	Wrong workflow
“Filed properly”	placed in a physical file	Wrong legal meaning
“Determination ready”	Ready to be determined	Wrong state

◆ A13-S12 — Class-L Ambiguity (Polysemy Exploits)

Attackers intentionally exploit words with multiple meanings.

Examples:

- “Appeal” → attractiveness
- “Charge” → accusation
- “Adjustment” → physical adjustment
- “Claim” → accusation

Used to make AI/automation mis-handle regulatory processes.

◆ A13-S13 — Class-M Ambiguity (Model Drift Across Languages)

Same meaning but different LLM outputs across languages → adversarial opportunity.

Examples:

English: “Is the rating correct?” → legal check

Spanish: “¿Es correcta la calificación?” → product review

Chinese: “评分准确吗？” → numerical rating (not VA rating)

