MiCA
Crypto Alliance

Seven Types of Errors in XBRL White Papers and the Limits of Superficial Validation

A report by the MiCA Crypto Alliance

MiCA Crypto Alliance

Seven Types of Errors in XBRL White Papers and the Limits of Superficial Validation

Under the Markets in Crypto-Assets (MiCA) Regulation, crypto-asset white papers submitted to national competent authorities are required to be machine-readable and structured using inline XBRL (iXBRL). This requirement is intended to enable comparability, automated supervision, and downstream analysis. In practice, however, the prevailing validation workflow creates a systematic risk of undetected errors. Reliance on manual tagging, the use of low-cost tooling, and limited specialist expertise result in multiple categories of errors, some immediately visible, and others latent, with effects that may only materialise at a later stage.

It is not uncommon to see white paper preparers to describe iXBRL requirements as "merely a tagging system", as if machine-readability best practices were comparable to adding italics in markdown. In reality, iXBRL is a formal reporting language with strict syntactic, semantic, and regulatory constraints. For this reason, reliance on appropriate infrastructure and processes, designed from the bottom up, is preferable to last-mile tagging, as tagging choices and coding mistakes may affect not only the document's ability to pass preliminary automated checks, but also the user experience for regulators and the white paper's capacity to remain reliable over time. Errors may remain latent until exposed through downstream validation or supervisory use.

The Seven Types of XBRL Errors

1. XML and schema loading failures
2. Presentation errors
3. Dimension errors
4. Calculation errors
5. Validation errors
6. Code errors arising from valid data types absent from the Data Type Register
7. Code errors arising from inconsistent definitions

01 HML and Schema Loading Failures

Schema loading failures consist of invalid XML, such as unclosed XML tags (well-formedness errors) or typographical errors in tags that lead to invalid data types or XML Schema resolution failure. In such cases, no XBRL instance can be constructed. Depending on the nature of the error, validation tools may not proceed to code, presentation, dimension, calculation, or MiCA rule checks. In practical terms, when a white paper exhibiting this error type is loaded into a validation tool, the errors are flagged at the loading stage itself, and the document fails before the MiCA taxonomy validation even begins. Such hard parsing errors are independent of MiCA, XBRL taxonomies, or plugins. They cannot be masked, truncated, or selectively reported in the manner of higher-level validation errors, and will result in the immediate rejection of the white paper.

02 Presentation and Dimension Errors

Presentation and dimension shortcomings are even more frequently overlooked. These relate to the structure and ordering of disclosures in the presentation linkbase, as well as to the incorrect use of axes, domains, or members. While they do not affect calculation integrity, they materially impair interpretability and comparability across issuers, which is a core MiCA objective. We have observed multiple instances of MiCA white papers lacking presentation and dimension layers altogether, particularly where XBRL software designed for annual financial reports is repurposed for MiCA by non-specialised parties with limited experience in white paper preparation. Such software may allow the export of white papers that pass a basic validation check, even though validation tools clearly indicate the complete absence of presentation and dimension layers. This can result in a white paper that passes automated checks but performs poorly from the perspective of the national competent authority (NCA). For example, when viewed through a validation tool, the white paper may present an entirely empty user interface. Correct implementation of the presentation and dimension layers of the taxonomy ensures that supervisory reviewers can effectively read and analyse the white paper using their tools. White papers lacking these features may formally pass validity checks, but they do not make full use of the MiCA taxonomy and may result in a poor user experience for regulators.

In addition, dimension errors may present more subtle risks, as they can lead to disclosures that are technically valid but conceptually incorrect. For example, an advisor may be tagged as part of the development team, and vice versa. Such errors will not trigger a hard validation failure but will nevertheless result in inaccurate disclosures. This type of error is more likely to occur when white paper preparation is not embedded within a professional XBRL workflow, and the preparer is required to make taxonomy decisions each time a white paper is drafted. This is common both where tools for financial reporting are repurposed for MiCA purposes, and when white papers are manually tagged on a case-by-case basis. By introducing a human decision point into each preparation process, the error surface is multiplied.

03 Calculation Errors

Calculation errors are currently of limited concern under MiCA, as the regulation relies only marginally on computed aggregates, and most quantitative disclosures are reported as standalone values rather than derived figures. Where they occur, such errors would be flagged by validation tools. However, even best-in-class white papers are not expected to include calculation linkbases in 2026. This is likely to change over time. As NCAs and white paper preparers become more familiar with iXBRL filings, the full capabilities of the format are expected to be utilised. As a consequence, white papers produced using artisanal, manually tagged approaches are likely to require complete reworking in the future.

04 Validation Errors

Validation errors are breaches of explicit validity rules encoded in the MiCA XBRL taxonomy or in its associated validation rule set. They can be detected deterministically by a validator, without interpretation, judgement, or reliance on external information. Examples include missing mandatory elements or conditionally mandatory elements, violations of cardinality constraints, use of a concept outside the permitted dimensional context, reliance on data types or units prohibited by, but not merely absent from, the MiCA Data Type Register, and breaches of formula rules.

These are the machine-detectable errors par excellence and, as such, should be the easiest to avoid. At the MiCA Crypto Alliance, we have identified submitted white papers containing errors of this kind, which can only be explained by a failure to perform even a basic validity check using a standard XBRL validation tool, as such errors are revealed immediately after loading the taxonomy and running validation. It is conceivable that some NCAs may also not yet be equipped with such tools at the point of submission. As we consistently emphasise, the absence of validation errors does not imply that a white paper is correct, as the other six error types may still be present. Conversely, the presence of validation errors will almost certainly result in the immediate rejection of the white paper by the authorities.

05 Data Type Register Errors

We have just referred to data types prohibited by the Data Type Register. A distinct scenario concerns data types absent from the register. The distinction is important, as the former will be detected by any validation tool as a breach, whereas the latter constitute a separate category of error that may not be identified by standard software without specialised plugins. Depending on the validator used, the filing may or may not be flagged as erroneous, but it remains non-compliant in all cases.

06 Definition Consistency Errors

Similarly, and as a final category, there are code-level consistency errors, where definitions, labels, and references are internally inconsistent across the taxonomy extensions used by an issuer. For instance, a “dateyearmonthday” prefix may be defined as “ixt4” or “ixt”, but whichever is selected must be applied consistently. We have identified instances of such errors that went undetected for extended periods, as basic validation does not look at such problems when they do not cause schema loading failures. Nevertheless, where an NCA uses validation tools equipped with certain plugins, issuers may be informed of errors that are not visible in their own validation results. Professional white paper preparers would not typically encounter such issues, as these errors tend to arise from ad hoc human intervention. By contrast,organisations such as the MiCA Crypto Alliance rely on standardised and semi-automated software or professional workflows in which code-level definitions and data types are configured once and remain consistently correct over time. Lower cost alternatives and do-it-yourself preparers may therefore be more exposed to this category of error.

07 Conclusion

The cumulative effect is that an XBRL white paper can appear “valid” while still failing MiCA requirements in multiple material respects. White paper validity is invariant, regardless of the validation tool used by the NCA. Overall correctness, however, may be identified only through the use of certain plugins and, in some cases, only through direct review of the document.

As we have pointed out in our recent webinar, this matter is further complicated by discrepancies between the MiCA XBRL taxonomy and the MiCA regulatory technical standards (RTS) for white papers. The two templates, which are intended to align, often do not, placing preparers in the position of having to breach one set of requirements to comply with the other. There are mechanisms to address these inconsistencies, but their treatment falls outside the scope of this article.

Seven Types of Errors in XBRL White Papers and the Limits of Superficial Validation

MiCA Crypto Alliance

The MiCA Crypto Alliance is a leading collaborative initiative simplifying regulatory compliance across the crypto industry. We provide verified sustainability data and write MiCA-compliant white papers to help token issuers, CASPs and crypto projects meet their disclosure obligations under MiCA.

This alliance focuses on standardising compliance efforts among its members, offering exclusive resources like sustainability indicators and white paper elaboration tools tailored to meet MiCA requirements. By leveraging the collective expertise of its members, the MiCA Crypto Alliance will help reduce the complexities and costs associated with compliance, while setting a high standard for transparency, market integrity, and consumer protection. For more details on joining the MiCA Crypto Alliance.

Visit: **micacryptoalliance.com**
Contact us: **contact@micacryptoalliance.com**

Email address: contact@micacryptoalliance.com