

5.2.1 Tooling Requirements

It is important that extension producers understand that some aspects of authoring and managing an extension are complex and will benefit from appropriate tooling.

Editions should not be handcrafted or managed using documents, files or simple spreadsheets, as these are likely to lead to technical errors and inconsistencies. Extension content needs to be reviewed in relation to its dependencies on the International Edition (and any other dependencies) which makes manual management and validation of extension content an unsustainable practice. Tools are required to maintain SNOMED CT content appropriately and to initiate automatic checks which can prevent errors.

As part of authoring and preparing for a release, all extension producers need tools capable of managing RF2 release file structures and performing necessary validation checks. Managing of RF2 files includes a mechanism for creating components and reference sets. There may be additional functionality required but this will vary depending on the content of the extension. For example, some extension producers producing new clinical concepts will need to be able to classify their extension to validate the created content and create the inferred relationships (necessary normal view) based on the stated relationships in the extension. Extensions which are merely used to distribute a translated version of SNOMED CT, or locally defined reference sets that only reference international release content will not need this classifying functionality as these extensions will only include primitive, metadata concepts. Please see the section on [5.6.1.1 Classifying an Edition](#) for further information.

Table 5.2.1-1 summarizes the overall tooling considerations by category and services required. These are the tools required throughout the extension lifecycle including creation, management and distribution. Please note that this is not meant to be an exhaustive list, but instead summarize some of the key tools and services required.

Table 5.2.1-1: Extension tooling considerations

Category	Services /Mechanisms	Description
Authoring tools	Generate and manage SCTIDs	The ability to generate SCTIDs that are required for any component created within the extension. For more information, see generating identifiers .
	Generate and manage UUIDs	The ability to generate UUIDs that are required for any reference set member created within the extension. For more information, see generating identifiers .
	Author and maintain components	The ability to create concepts, descriptions and relationships in accordance with editorial principles. Note that varying levels of services and sophistication may be offered in tooling, but it is recommended to use tools which can demonstrate adherence to editorial principles. For example, a tool should ensure: <ul style="list-style-type: none"> • Compliance with the concept model • Component authoring rules such as concepts created with the mandatory subtype relationships and descriptions For more information, see authoring section.
	Author and maintain reference sets	The ability to create and maintain reference which comply with the reference set pattern as specified in the reference set descriptor and offer additional functionality such as the providing intensional definition of subset members <p>For more information, see 6.3.2 Authoring Reference Sets.</p>
Validation tools	Automatic validation of individual components	The ability to automatically validate that any terminology component present in the extension complies with the logical design of SNOMED CT, and that referential integrity is retained. For more information, see 5.5 Review and Validation .
	Automatic validation of the entire extension	The ability to automatically validate that the extension is ready for release. This includes ensuring the validity of release file structures, release file types, and referential integrity across all components and release files. For more information, see 5.5 Review and Validation .
Packaging and distribution tools	Classify extensions	The ability to classify SNOMED CT to create inferred relationships. For more information, see 5.6.1.1 Classifying an Edition
	Package extension edition	The ability to organize and package the edition according to the recommended release file structure. For more information, see 5.6.1.2 Packaging and File Naming .
	File or service-based distribution	The ability to distribute the edition, so extension consumers can access the terminology, either based on file distribution techniques or dedicated services to access specific terminology parts. For more information, see 5.6 Distribution .
Maintenance tools	Change request service	The ability to collect and process change requests, such as suggestions for new concepts, required synonyms for particular concepts, and new reference set members. These tools should also support the ability to forward internal change requests to SNOMED International when appropriate.

Change
identification
mechanism

The ability to align the extension with the International Edition when new versions are published. This tooling includes the ability to identify changes to the International Edition which may affect the extension.