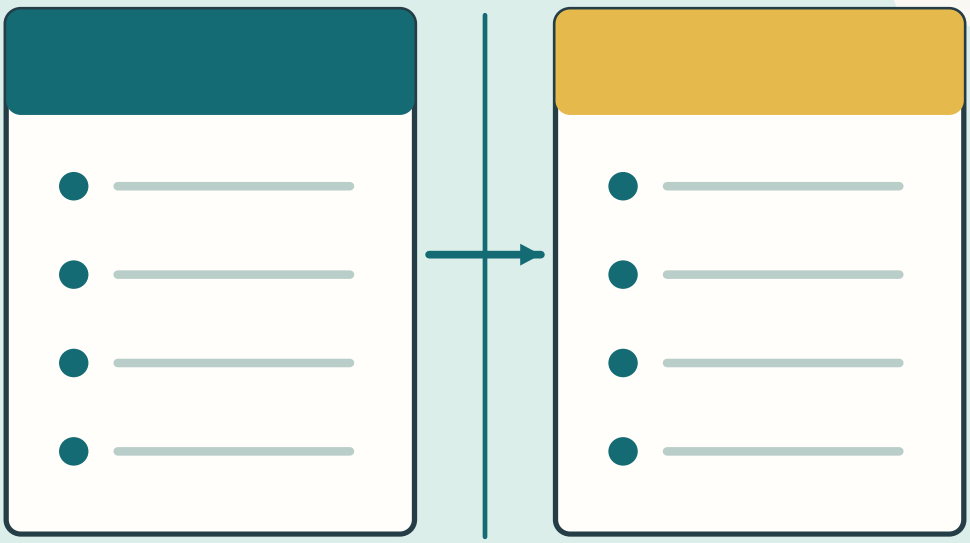
SOURCE PACK CONTRADICTIONS

Mapping Contradictions Across Source Packs



SOURCES / CONFLICTS

AI & DATA

Mapping Contradictions Across Source Packs

Learning outcomes

- Identify five conflicting claims across document versions.
- Separate contradiction from different scope.
- Create a conflict map without declaring an unsupported winner.
- Decompose source statements into atomic claims with operators, modality and scope.
- Distinguish genuine incompatibility from scope differences, equivalent units, compatible bounds and missing coverage.
- Map multi-source candidate groups without choosing by recency, repetition or arithmetic compromise.
- Record bounded consequences and proposed resolver roles without implying approval.
- Apply explicit scoped resolution evidence while retaining original claims and partial unresolved intervals.
- Evaluate detection and deliver separate historical/current views for a twelve-comparison source pack.

Original teaching material. All organizations, people, records and operational rules in exercises are synthetic. Use only the supplied non-sensitive inputs. This is a practice course, not an accredited or regulated certification.

Study the foundations, work through the applied units, complete the practice tasks, and then attempt the assessment. Use only the supplied fictional practice data. Keep your original inputs and your revised work separate.

Foundation exercise conditions

- The original D1/D2 practice uses a local comparison constraint: each target is single-valued for the same pilot and operating period. For its required-submission-format target, compare printed-only versus digital-only as the exercise rule. This constraint defines the classroom comparison; it is not additional wording or an independently established fact in D1 or D2. The original source records remain unchanged.
- Without that explicitly stated exclusivity constraint, printed forms are required and digital forms are required could both apply, for example as two required copies. Different format requirements are therefore not automatically a logical contradiction. Apply exclusivity only where the case contract or source supplies it; do not infer it in other source packs.

Core concepts

Define the claim being compared

A contradiction requires two claims about the same subject, attribute and applicable context that cannot both hold as stated. Capacity 20 for Room A and capacity 24 for Room B are not necessarily conflicting. Before comparing, write the subject, attribute, time period and scope. If any differs, record a possible scope mismatch instead of asserting a contradiction. For this exercise both documents concern the same fictional pilot and the same operating period, so different values for its start date, capacity, closing time, form format and owner can be compared directly.

Version is evidence, not automatic authority

A later date or higher version number does not by itself prove approval. A draft may be newer than the currently approved procedure. Record document ID, version label, publication date and approval status separately. If approval status is unavailable, say so. Do not ask AI to pick whichever version looks more polished or more recent. The conflict map’s purpose is to make disagreement visible for an authorized owner, not to conceal it through premature reconciliation.

Build a claim-pair record

For each conflict, include a stable conflict ID, the disputed attribute, each source’s exact claim and location, the practical consequence and a role that can resolve it. A schedule owner can verify dates; a capacity or facilities owner can verify room limits. These are routing suggestions, not evidence that those roles already approved a value. Copy enough surrounding wording to preserve conditions. If one document is silent, record missing coverage rather than a direct contradiction, because silence does not assert the opposite.

Close conflicts with new evidence

Until a resolution arrives, label the disputed value unresolved. If a reviewer provides an approved decision, attach that evidence, its effective date and which claims it supersedes. A conflict can be closed without deleting the old sources. This creates an audit trail of why the final value changed. When summarizing for another team, distinguish unresolved conflicts from confirmed resolutions; otherwise a compact summary may accidentally convert a disputed number into an instruction. The five exercise conflicts must all remain unresolved because no approval evidence is supplied.

Worked example

Demonstration: an approved note says storage opens at 09:00; a newer draft says 08:30. The map records both times and asks the operations owner to confirm the effective schedule. It does not replace 09:00 merely because the draft is newer. If the draft explicitly covered a different weekend schedule, that scope difference would need to be checked first.

Foundation practice

Source pack

id	version	date	text
D1	1.0	2026-05-01	Pilot start is June 3. Capacity is 20. Desk closes at 17:00. Printed forms are required. Owner role is Operations.
D2	1.1 draft	2026-05-04	Pilot start is June 5. Capacity is 24. Desk closes at 18:00. Digital forms are required. Owner role is Facilities.

Scope

Both documents concern the same pilot and operating period. D2 is explicitly a draft. No approval or supersession record is supplied.

Foundation tasks

Guided preparation

Instructions

Read the complete input pack. Create the output columns specified in the capstone, keep the original IDs, and state the unit of work. Complete the first two records manually before using an optional AI assistant. Record any assumption that could change the result.

Independent capstone

Instructions

Create five conflict records with claim pairs, versions, consequences and proposed resolution-owner roles. Do not choose a winning value. Add one sentence explaining why a newer draft is not automatically authoritative.

Peer verification and revision

Instructions

Exchange only your student work with a peer. Ask the peer to trace two ordinary results and every exception back to the supplied input. Record the exact item corrected, the original value, revised value and reason. Submit the revised artifact plus a short explanation of the most important remaining limitation.

01 Define contradiction as incompatible claims in the same context

A contradiction map is not a list of every difference between documents. Two statements conflict only when they make incompatible claims about the same subject, attribute and applicable context. “Room Cedar holds 20” and “Room Birch holds 24” can both be true. Even “Cedar holds 20” and “Cedar holds 24” need context: one may describe a seated layout and the other a standing layout. Start by defining what is being compared before deciding whether values disagree.

Represent each assertion as a claim with a stable claim ID. Useful components are subject, attribute, asserted value, comparison operator, modality, applicable period, population or configuration, and source reference. The comparison operator distinguishes exact values from limits or membership claims. Modality distinguishes a current requirement from a proposal, plan or observation. The source reference identifies the document version and exact location. These components prevent a fluent summary from collapsing unlike claims into one apparent disagreement.

A worked pair makes the test concrete. A says “For Cedar’s seated workshop layout during October, the exact maximum booking count is 20.” B says “For the same layout and period, the exact maximum booking count is 24.” Both claims cannot describe the same single-valued maximum as stated. The map records a contradiction. It does not decide whether A or B is correct, nor does it choose 22 as a compromise. Detecting incompatibility and resolving authority are separate tasks.

The output vocabulary in this expansion is CONTRADICTION, DIFFERENT_SCOPE, COMPATIBLE, MISSING_COVERAGE and NEEDS_CONTEXT. CONTRADICTION means the comparison is sufficiently aligned and incompatible. DIFFERENT_SCOPE means a documented context difference allows both claims to stand without direct comparison. COMPATIBLE means the aligned assertions can both hold, including equivalent units. MISSING_COVERAGE means one source supplies no assertion for the target. NEEDS_CONTEXT means the supplied information is insufficient to establish alignment or incompatibility. These are original course conventions.

Keep resolution status separate from comparison outcome. A pair can remain a documented contradiction even after authorized evidence resolves which value applies. Its current resolution_status changes from UNRESOLVED to RESOLVED, while the historical disagreement remains in the audit trail. Deleting it would make the later decision harder to explain.

E01-X1 Align before judging

A says Cedar seated-layout maximum is exactly 20 for October. B says Birch seated-layout maximum is exactly 24 for October. C says Cedar seated-layout maximum is exactly 24 for October. Classify A/B and A/C, without selecting a winning value.

Submit: Two comparison outcomes and context reasons.

02 Decompose compound sentences into atomic assertions

A single sentence can contain several claims that need separate comparison. “The pilot starts June 3, accepts 20 visitors and closes at 17:00” contains start date, capacity and closing time assertions. If another document changes only closing time, the entire sentence is not one indivisible conflict. Create one claim per attribute so the map can identify what agrees, what conflicts and what remains unmentioned.

Preserve shared context while splitting. If a paragraph heading says “Weekday pilot, Room Cedar, October,” each extracted claim inherits that context. Record the heading reference rather than losing it during sentence decomposition. A claim value without its context can generate false contradictions when compared with a weekend or different-room statement. Atomic does not mean context-free; it means one substantive assertion per record with all necessary qualifiers attached.

Do not split logical conditions into independent unconditional claims. “Digital forms are accepted only for internal staff” is one conditional acceptance claim. Extracting “digital forms accepted” and “internal staff” as unrelated fragments would broaden permission. Similarly, “Either paper or digital submission is accepted” describes alternatives, not a requirement to submit both. The representation must preserve the relationship between clauses and values.

Worked paragraph P1 says “During October weekdays, Cedar closes at 17:00 and requires one paper submission; weekend hours are listed separately.” A useful claim ledger has a weekday closing-time claim and a weekday submission-format claim, each scoped to Cedar/October. The last clause signals a separate scope but supplies no weekend time. Do not invent a weekend closing claim from the weekday number. A comparison with another source’s 18:00 weekend time is a scope difference, not a contradiction with the weekday claim.

Atomic claims also make resolution safer. An approval that changes the closing time should affect only that claim, not the capacity or form requirement in the same original sentence. Store the exact source span and a stable claim ID so the resolution can name the affected assertion precisely. The original paragraph remains intact as evidence; decomposition is an analytical view, not permission to rewrite the source.

E02-X1 Split without losing conditions

Source P1:L2 says “For Cedar weekday sessions in October, maximum attendance is exactly 20 and closing time is 17:00. Weekend rules are not stated here.” Create two claims and identify one thing the source does not establish.

Submit: Two atomic claims plus one coverage limit.

03 Build a scope key before matching claim pairs

A scope key collects the dimensions that must match for the current comparison. It may include subject, attribute, population, location, configuration and applicable period. Not every task needs every dimension, but the key must include anything that changes the claim’s meaning. For a workshop capacity, seated versus standing layout matters. For a submission rule, internal staff versus visitors may matter. For closing time, weekday versus weekend matters.

Distinguish a known scope difference from a missing scope. If A explicitly concerns Cedar and B explicitly concerns Birch, DIFFERENT_SCOPE is supported. If B says only “the room” and the packet does not identify it, use NEEDS_CONTEXT rather than declaring either conflict or compatibility. Unknown alignment is not the same as proven different alignment. A targeted question asks which room B refers to; it does not ask which capacity number the reviewer prefers.

A scope grid can make this visible before any value comparison. List each claim’s dimensions in columns and mark which agree, differ or are absent. Only compare normalized values after inspecting that grid. This prevents the common failure of finding different numbers first and then searching for reasons to call them a conflict. The method is deliberately conservative about incompatibility but should not hide genuine conflicts when all relevant dimensions match.

Worked set: A applies to Cedar, seated layout, October weekdays, maximum bookings 20. B applies to Cedar, standing layout, October weekdays, maximum bookings 24. C applies to Cedar, seated layout, October weekdays, maximum bookings 24. A/B is DIFFERENT_SCOPE because configuration differs. A/C is CONTRADICTION. D says “maximum bookings 24” without a subject or period; A/D is NEEDS_CONTEXT. The same number 24 participates in three different comparison outcomes because context differs.

Do not make the scope key so elaborate that no two claims can ever conflict. Include dimensions supported by the task and sources, not invented distinctions that rescue disagreement. If both documents explicitly concern the same pilot and period, adding an imagined shift or room subdivision is speculation. The purpose of scope analysis is to preserve real context, not manufacture excuses to avoid an uncomfortable conflict.

E03-X1 Distinguish different from unknown scope

A: Cedar seated layout, October weekdays, exact maximum 20. B: Cedar standing layout, October weekdays, exact maximum 24. C: “Maximum 24,” with no room/layout/period. Give A/B and A/C outcomes and one question for C.

Submit: Two outcomes and a scope clarification.

04 Normalize representation without erasing semantic differences

Equivalent representations can look contradictory until units, date formats or labels are aligned. “Cable length 150 cm” and “cable length 1.5 m” describe the same length under the same measurement definition. “2026-06-03” and “3 June 2026” describe the same date. Normalize reversible representation differences before flagging a conflict, but keep the original wording so a reviewer can inspect the transformation.

Normalization does not permit changing the attribute. “Rated input 500 W” and “cycle energy 0.5 kWh” are different concepts, not equivalent numbers to convert into one column. “Nominal capacity 2 L” and “usable capacity 1.8 L” have different measurement definitions. The appropriate outcome is DIFFERENT_SCOPE or NEEDS_CONTEXT under the task’s scheme, not a numerical contradiction just because values differ. The scope key includes the measurement basis when it matters.

A comparison ledger should contain raw values, normalized values, units and normalization basis. For 150 cm versus 1.5 m, record 1.5 m for both and the factor 0.01 for the centimeter value. Do not delete the raw 150 cm. If a conversion is wrong, preserving the raw assertion makes it possible to correct the analytical result without accusing the source of a contradiction it never contained.

Rounding can create apparent agreement or disagreement. An exact 1.49 m and a rounded display 1.5 m are not necessarily inconsistent if the second source explicitly rounds to one decimal. Conversely, two exact values 1.49 m and 1.50 m are different if the attribute is defined as a single exact length. The precision and qualifier are part of the claim. Do not assume a tolerance that the packet never supplies, and do not ignore a supplied rounding convention.

Normalization should be logged as interpretation, not authority. It can establish that two statements are equivalent in meaning, but it cannot decide which of two genuinely incompatible exact values is true. A model that “normalizes” capacity 20 and 24 into an average of 22 has reconciled by invention rather than transformed representation. The conflict must remain until valid resolution evidence appears.

E04-X1 Separate equivalent units from different concepts

A says included cable length exactly 150 cm; B says the same included cable length exactly 1.5 m. C says nominal tank capacity 2 L; D says usable fill capacity 1.8 L. Classify A/B and C/D and show the conversion.

Submit: Two outcomes and one reversible calculation.

05 Check operators, exclusivity and quantifiers

Two different values can be compatible when their operators differ. “Attendance is at most 30” and “attendance is exactly 20” can both hold. “Attendance is at least 25” and “attendance is exactly 20” cannot both hold for the same event and population. Preserve exact, at most, at least, only, all, some and permitted as part of the assertion. Removing these words can reverse the comparison outcome.

Requirements and permissions also differ. “Paper submission is permitted” does not mean paper is required, and “digital submission is required” does not necessarily forbid paper as an additional copy. To establish a format contradiction, the packet should specify exclusivity or a single-valued target, such as “the sole required submission format is paper” versus “the sole required submission format is digital.” Without that boundary, two requirements may coexist rather than logically negate each other.

A worked membership example uses colors. A says “Blue and green badges are permitted.” B says “Green badges are permitted.” These statements are compatible if B is not an exhaustive list. B’s silence about blue is missing coverage, not a prohibition. If B instead says “Only green badges are permitted,” it excludes blue and conflicts with A’s permission for blue under the same scope. The word only changes the allowed set, not just the style of writing.

Quantifier scope matters as well. “All visitors must sign in” and “Some visitors signed in” are not contradictory: one is a requirement and the other a partial observation. “All visitors signed in” and “Visitor V7 did not sign in,” with V7 explicitly in the same visitor population and period, are incompatible observations. Do not compare a policy with a report of noncompliance as if one automatically invalidated the policy. The relationship may be rule versus observed behavior, not two rival descriptions of the rule.

Before flagging a contradiction, attempt a simple compatibility witness: can you describe one situation in which both claims are true as stated? If yes, a direct contradiction has not been established. For at most 30 and exactly 20, attendance 20 is such a witness. If no, explain which operators make coexistence impossible. This is a reasoning test, not permission to invent the actual world state.

E05-X1 Test compatibility through operators

Same event and population: P1 says exactly 20 attendees; P2 says at most 30; P3 says at least 25. Separately, F1 says paper permitted and F2 says digital required, without exclusivity. Classify P1/P2, P1/P3 and F1/F2.

Submit: Three outcomes with logical reasons.

06 Separate publication date from effective applicability

A document has a publication or revision date, while its claims may apply to an earlier or later period. These are different clocks. A notice published September 20 can govern October operations. A notice published October 5 can describe September results. Comparing publication dates alone can create false conflicts or hide real overlap. Record applicable start and end dates separately from document metadata.

Two incompatible values can coexist when their effective periods do not overlap. A maximum of 20 for October and 24 for November describes a change over time, not necessarily a contradiction. If both claim to apply throughout October, they conflict under the same subject and measurement definition. If one applies October 1–15 and another October 10–31, the possible conflict is limited to October 10–15. Do not label the entire month inconsistent when only the overlap is affected.

For the date-only examples, stated ranges include both endpoints. The overlap starts at the later start date and ends at the earlier end date. If the resulting start is after the end, there is no overlap. This simple interval calculation is supplied as a local comparison method, not a complete temporal database theory. Keep the original date phrases and the calculation so a reviewer can verify which days are affected.

Worked example: A states Cedar maximum 20 from October 1 through October 15. B states Cedar maximum 24 from October 10 through October 31. Their exact values conflict on October 10–15, a six-calendar-day inclusive span. Outside that overlap, the pair does not establish simultaneous incompatible claims. If a resolution later applies only from October 16, it does not resolve the earlier overlap. Authority must cover both the attribute and the disputed period.

When an effective period is absent, use NEEDS_CONTEXT if it is necessary to determine whether the claims overlap. Do not assume publication day equals effective day, and do not automatically extend a rule indefinitely. A targeted question asks when the claim applies. This preserves the difference between a documented change and an unresolved contemporaneous disagreement.

E06-X1 Calculate the disputed overlap

A states exact maximum 20 for 2026-10-01 through 2026-10-15 inclusive. B states exact maximum 24 for 2026-10-10 through 2026-10-31 inclusive. Same room/layout. Give the conflict interval and inclusive number of days.

Submit: An overlap-bounded conflict record.

07 Record authority metadata without turning it into a shortcut

A version label, publication date, approval status and supersession statement are separate pieces of evidence. A higher version number can belong to a draft. A polished document can be unapproved. A file modification timestamp can reflect copying rather than a substantive decision. Preserve each field separately and mark unavailable approval information explicitly. Do not allow one convenient metadata value to stand in for all the others.

An approved source can have a legitimate role in an organization’s current operating policy, but this course does not let the analyst invent that policy. The packet must state how authority works. If it says an explicitly approved decision for the named attribute and period supersedes specified prior claims, apply that rule. If it supplies only two documents with no resolution authority, map the disagreement and leave the disputed target unresolved. Detecting a draft conflict does not authorize adopting the draft or discarding it as irrelevant evidence.

Worked sources: A is version 1.0, publication May 1, approval not supplied. B is version 1.1 draft, publication May 4. Both claim the same operating period and disagree on closing time. The map should say A’s approval is unknown and B is a draft. It should not call A approved merely because B is draft, and it should not call B authoritative merely because it is newer. These are two distinct unsupported shortcuts.

An authority matrix can list the role authorized to resolve each attribute under a synthetic packet rule. Schedule owner can resolve dates and hours; capacity owner can resolve booking maxima; process owner can resolve submission format. The role assignment is an exercise fact, not a real organizational assumption. A proposed reviewer role in your conflict map is only a routing suggestion until supplied evidence establishes that role’s decision and scope.

Authority does not change what the older source said. A valid resolution can make one value applicable going forward while the historical claims remain intact. The current view should cite the decision; the history should retain both prior assertions and their metadata. This separation lets a reader understand why a value is now usable without pretending the disagreement never existed.

E07-X1 Avoid two metadata assumptions

A is v1.0 dated May 1 with approval not supplied. B is v1.1 draft dated May 4. Both give incompatible exact closing times for the same period. State what is known about each source and whether either wins automatically.

Submit: Two metadata records and an unresolved decision.

08 Distinguish silence, incompleteness and explicit negation

Silence does not assert the opposite of a claim. If A states a deposit of five tokens and B says nothing about a deposit, the pair shows MISSING_COVERAGE. It does not show that B requires zero tokens or abolishes the deposit. If B explicitly states “No deposit is required,” then the two claims can conflict under the same scope. The difference between absence and negation is essential to a defensible map.

A source can also be incomplete without being silent on the whole attribute. “Closing time is 17:00 except on...” followed by a missing page supplies a qualified assertion whose exception is unavailable. Comparing it with a complete 18:00 claim may require NEEDS_CONTEXT rather than a definitive contradiction. Preserve the truncation and ask for the missing exception scope. Do not strip the incomplete qualifier and pretend the remaining sentence is unconditional.

Coverage review should be bounded to the supplied material. “B does not state a deposit in the complete supplied B packet” is a valid observation. “B’s author has no deposit policy” is not supported. Record which pages or lines were reviewed and whether the packet is described as complete. If attachments are referenced but absent, list the gap rather than assume they would agree with the main document. The map reports available evidence, not all possible evidence.

Worked contrast: B1 says nothing about badge colors; B2 says “Only green badges are permitted”; B3 says “Green badges are permitted.” Against A’s “Blue badges are permitted,” B1 is missing coverage, B2 is a contradiction under the same scope, and B3 is compatible because permitting green does not forbid blue. The words only and not are substantive evidence, while silence is not a hidden negative assertion.

A good conflict-map workflow therefore includes a coverage register alongside the contradiction register. Some important questions arise from missing coverage rather than incompatible statements. They may still deserve follow-up, but labeling them accurately avoids inflating the conflict count and helps the reviewer know whether to reconcile rival claims or obtain an absent one.

E08-X1 Classify coverage and negation

A says “A deposit of 5 tokens is required.” Same scope: B has no deposit statement; C says “No deposit is required.” Classify A/B and A/C and write the bounded coverage statement for B.

Submit: Two outcomes and one evidence-bound absence statement.

09 Map multiple sources without treating repetition as a vote

A source pack may contain more than two assertions about the same attribute. Group claims by aligned subject, attribute and context before comparing values. Preserve every source reference, but distinguish independent evidence from copied or derived repetitions. Three documents repeating one notice do not necessarily provide three independent confirmations. The map can show repeated support without turning document count into truth authority.

For four aligned exact-capacity claims with values 20, 24, 24 and 30, there are six unordered source pairs. Five pairs disagree and one pair, the two 24 claims, is compatible. A value-group view has three candidate values: 20 supported by one source, 24 by two, and 30 by one. Neither view authorizes choosing 24 by majority. The task supplies no voting rule, and the two 24 documents may even share a common origin.

Use conflict groups to avoid overwhelming the reader with redundant pair records. A group can name the subject/context, candidate values, source claims under each value and all unresolved authority questions. Keep pair-level links when needed for audit, but do not count one three-value disagreement as several unrelated operational problems. Report both the number of affected attributes and the number of incompatible source pairs when those metrics matter.

A provenance note can explain that S3 copies S2 verbatim or that S4 summarizes S1. This relationship is useful for review but does not by itself prove either claim true or false. Copied claims can be accurate; independent claims can be wrong. The point is to avoid mistaking repeated presentation for independent evidence. W3C provenance concepts provide background for tracking derivation, while the course’s grouping rules are original teaching conventions.

When a resolution arrives, apply it to the entire named conflict group only if its scope actually covers every active claim and period. A decision that supersedes S1 and S2 but says nothing about a later S4 assertion may leave part of the group unresolved. Record the exact superseded claims rather than marking all documents obsolete. Claim-level specificity keeps multi-source maps manageable without erasing important exceptions.

E09-X1 Count pairs and preserve candidate groups

Four sources for the same exact maximum and scope assert S1=20, S2=24, S3=24, S4=30. S3 is explicitly a copy of S2. Count all unordered pairs, incompatible pairs and distinct candidate values; state whether 24 wins.

Submit: Three counts, source grouping and authority conclusion.

10 Create a conflict record that another reviewer can act on

A conflict record should make the disagreement inspectable in one place. Include conflict_id, subject, attribute, scope key, both exact claims, source versions and locations, comparison reasoning, resolution status, practical consequence and proposed resolver role. Keep the proposed role separate from an actual decision-maker identity or approval record. The map is preparing review, not asserting that a resolution has already been authorized.

Exact source wording is important because a short paraphrase can erase qualifiers. “Closes 17:00” may omit “weekdays” or “from October 16.” Quote enough context to preserve the claim, and include the heading reference if it supplies scope. Do not overquote an entire page when two lines suffice. The reader should be able to trace each side and understand why they cannot both hold under the aligned context.

State the incompatibility directly. “Same room, same weekday period, exact closing times 17:00 and 18:00 differ” is stronger than “documents inconsistent.” It identifies the tested dimensions and values. A comparison outcome should not be justified only by a model confidence score. The reasoning must be checkable from source facts and the explicit local definitions, even when the AI assistant proposed the record.

Practical consequence should be conditional and proportionate. “Visitors could receive inconsistent arrival guidance” follows from conflicting hours. “The organization will lose a large amount of money” does not follow unless the packet supplies that consequence. Do not invent urgency, risk levels or costs to make the map look important. Consequence helps prioritize review; it does not determine which claim is true.

A good resolution question names the exact decision needed: “Which closing time applies to Cedar weekday sessions from October 1 through 31, and what approved decision supersedes the other claim?” This is more actionable than asking which document is correct overall. A document may contain both agreed and disputed attributes, so whole-document winner selection is often too broad. Preserve the field-level focus.

E10-X1 Write a complete closing-time conflict record

A:L3, v1.0, says Cedar October weekdays close 17:00. B:L3, v1.1 draft, says the same scope closes 18:00. No resolution authority is supplied. Include exact pair, scope, consequence, proposed role and question.

Submit: One unresolved conflict record.

11 Prioritize review without choosing truth by impact

A contradiction map can help organize review when several attributes disagree. Priority should reflect supplied consequences, dependencies and deadlines, not the analyst’s emotional reaction to a number. A conflict affecting tomorrow’s published schedule may need attention before a terminology difference in an unused appendix, if those circumstances are in the packet. If urgency is not supplied, avoid inventing it. Record the basis for any priority suggestion.

Impact and truth are independent dimensions. A highly consequential claim is not more likely to be correct because it matters more. A low-impact contradiction is still a contradiction. Do not choose the safer-looking capacity or earlier closing time as the factual winner without authority. You may flag that a disputed value should not be released as confirmed, but that is a communication limitation, not a resolution of the underlying source disagreement.

Use consequence statements that stay close to the attribute. Conflicting start dates can produce different preparation days. Conflicting capacity limits can produce inconsistent booking guidance. Conflicting sole owner roles can route questions to different teams. These are plausible direct consequences of disagreement, not assertions that harm has already occurred. State could or may where the packet does not report an actual outcome.

Resolver suggestions should follow the type of decision, not merely the author of the newest document. A schedule role may resolve hours, a process role may resolve form format, and a sponsor may resolve ownership. In this course those are suggestions unless the packet explicitly provides an authority registry. Do not contact anyone or make a real operational change as part of the classroom exercise. The deliverable is a review-ready map and targeted questions.

A useful triage view groups unresolved conflicts by decision owner and affected release, while retaining all source links. It does not hide lower-priority items or convert them to resolved. If a conflict depends on another decision, show that dependency. For example, a closing-time notice cannot be finalized until the effective schedule is confirmed. The map should help the authorized reviewer see what evidence is needed next, not make the decision on their behalf.

E11-X1 Separate priority from factual selection

The packet says a public notice must be prepared tomorrow and closing time is disputed; a separate owner-role conflict affects a later internal index. No resolution evidence is supplied. Propose a review order and state whether the earlier closing time can be released as confirmed merely because it seems cautious.

Submit: A bounded priority recommendation and authority limit.

12 Close a conflict only with scoped resolution evidence

Resolution requires evidence that identifies the decision, authority, affected claims and applicability. In a synthetic packet, the contract can state which roles may resolve which attributes and what counts as an approved decision. Apply that rule exactly. A casual comment, an unsigned proposal or an ambiguous “looks fine” should not be promoted into a resolution when the contract requires an explicit approved decision.

A complete resolution record contains resolution_id, conflict_id, decision value, authorized role, approval status, effective period, superseded claim IDs and evidence reference. It may choose one prior value or establish a new value. If the approved decision sets closing time to 17:30 while prior sources said 17:00 and 18:00, the new value is legitimate because it comes

from supplied authority evidence, not from averaging. The same numeric midpoint would be unsupported if the analyst invented it.

Worked rule: the schedule owner may approve closing times for Cedar’s October pilot. Decision R1 explicitly says “Approved: Cedar October weekday closing is 17:30; supersedes claims A3 and B3 for October 1–31.” That resolves the named conflict for the named period. It does not resolve a capacity disagreement in A2/B2 or a November-hours disagreement. Keep the resolution scope as narrow as the evidence. Whole-document deletion would be inappropriate.

Retain the original claims and mark their relation to the decision. A current operational view can show 17:30 with R1 as authority, while the conflict history still shows A3=17:00 and B3=18:00. The history explains why the value changed. Do not rewrite A3 or B3 as if they always contained 17:30. That would destroy the audit trail and make later source comparisons unreliable.

A resolution can be partial. If R1 applies only from October 16, the earlier October 1–15 conflict remains unresolved unless another rule covers it. The current map should split the applicability interval or record a partially resolved status with explicit residual scope. A single green resolved badge without dates would conceal the remaining disagreement. Precision about scope is just as important at closure as at detection.

E12-X1 Apply a narrow approved decision

The packet authorizes the schedule owner for closing times. R1 is explicitly approved and sets Cedar October weekday close to 17:30, superseding A3/B3 for October 1–31. A2/B2 still dispute capacity. State what closes, what remains open and what history stays.

Submit: One resolution update and one untouched conflict.

13 Handle partial resolutions and later incompatible evidence

A conflict can move from unresolved to resolved and later require review again if new applicable evidence appears. Do not treat resolution as a permanent shield against all future claims. Compare the new assertion’s subject, attribute, period and authority relationship with the existing decision. A later draft may remain non-authoritative but still creates a documented discrepancy to investigate; a later authorized decision may supersede the earlier one within a stated scope.

A useful state history distinguishes the comparison outcome from current resolution state. The original A/B pair remains historically incompatible. R1 may resolve it for October 1–15, leaving October 16–31 open. R2 may later resolve the remaining interval. A new C claim may apply only in November and therefore not reopen the October conflict. Without explicit periods, a simplistic latest-file rule can either reopen too much or ignore a real overlap.

Worked example: A says exact capacity 20 throughout October; B says 24 throughout October. Authorized R1 sets 24 for October 16–31 and names A/B as superseded only for those dates. The map has an unresolved October 1–15 segment and a resolved October

16–31 segment. If an analyst marks the whole conflict resolved, users may mistakenly apply 24 to the earlier dates. If the analyst ignores R1, users lose a valid partial decision. Both errors arise from collapsing scope.

New evidence should be logged before updating the current view. Record which prior claims or resolutions it references and what it explicitly changes. A statement “capacity is 24” with no period cannot automatically override the scoped R1. It may require a context question. A statement “approved correction to R1, effective October 20 onward” has a clearer relationship but still needs the packet’s authority rule. Recency alone does not supply that relationship.

After any update, check dependent summaries and release notes. A count of unresolved conflicts may depend on whether the unit is an attribute, a source pair or a scope segment. State the unit explicitly. “One capacity attribute remains partly unresolved” can be more informative than reporting two conflicts after splitting the dates. The map’s structure should clarify the decision, not inflate statistics through bookkeeping.

E13-X1 Describe a partial closure precisely

A/B conflict on exact capacity covers October 1–31. Approved R1 resolves capacity as 24 only for October 16–31. Give the unresolved interval, resolved interval and a correct one-sentence status summary.

Submit: Two scoped segments and one summary.

14 Work a complete mixed-outcome source comparison

The following compact studio pack contains both real contradictions and controls that should not be flagged. A1 says Cedar October weekday maximum is exactly 20. A2 says Cedar October weekday closing is 17:00. A3 says the included cable is exactly 150 cm. A4 says a five-token deposit is required. B1 says the same Cedar scope has exact maximum 24. B2 says Birch October weekdays close at 18:00. B3 says the same included cable is exactly 1.5 m. B contains no deposit statement. No resolution evidence is supplied.

Compare the intended pairs A1/B1, A2/B2, A3/B3 and A4/B coverage. A1/B1 is CONTRADICTION because the same exact maximum differs in the same scope. A2/B2 is DIFFERENT_SCOPE because Cedar and Birch are different rooms. A3/B3 is COMPATIBLE after converting 150 cm to 1.5 m. A4/B is MISSING_COVERAGE because silence does not negate the deposit. The map has one unresolved contradiction, not four conflicts.

The claim ledger still retains all seven substantive assertions, including those used in non-conflict comparisons. A coverage entry records the absence of a deposit assertion in the complete supplied B text. Do not invent a B4 claim saying deposit zero merely to make the table symmetrical. The comparison register can reference a source coverage check rather than a nonexistent claim ID. This makes the evidence structure honest even when one side is absent.

A candidate summary saying “The new document changes capacity, hours, cable and deposit” overstates three of the four comparisons. Only capacity is a direct incompatible change for the aligned target. Hours concern a different room, cable is equivalent and deposit is not addressed. Correct the narrative from the checked comparison register rather than relying on a broad document-diff impression. Textual differences and semantic contradictions are not the same metric.

Verification checks include claim coverage, correct scope matching, reversible conversion, absence of invented opposite claims and no unsupported winner for capacity. A useful handoff can state the single unresolved attribute and the three non-conflict explanations. That summary helps the reviewer focus without hiding source differences that may still matter for completeness or later tasks.

E14-X1 Audit a four-pair overflagging error

A candidate marks all four intended comparisons in the worked studio pack CONTRADICTION. Correct each outcome, count genuine contradictions and explain why a B deposit value must not be invented.

Submit: Four corrected outcomes and a count.

15 Measure detection quality with explicit comparison units

A contradiction detector can make two broad errors: flagging compatible or differently scoped claims as conflicts, and missing genuine incompatible claims. Evaluate a supplied reference set of comparisons rather than merely counting how many conflicts the system reports. More flags are not automatically better. A detector that marks every difference as contradiction may have high coverage of true conflicts but create a large amount of unnecessary review.

Define the evaluation unit before calculating. It may be a named claim pair, an attribute-level conflict group or a scoped interval. Do not mix those denominators. In this course’s independent packet, the unit is one named comparison P01–P12. A source group with three values could generate several pairs, so pair counts should not be confused with the number of affected attributes. The reference outcomes include non-conflict controls precisely to test overflagging.

Worked audit: a reference set has ten comparisons, four true contradictions. A detector flags five comparisons, three of which are genuine. It has three true positives, two false positives and one false negative. Conflict precision is 3/5, or 60%; conflict recall is 3/4, or 75%. These metrics answer different questions: whether flagged pairs really conflict and whether actual conflicts were found. They do not evaluate resolution authority or source quotation quality.

Add a second quality layer for map completeness. Every true conflict should retain both source claims, aligned scope, unresolved status unless valid resolution exists, and a bounded consequence or question. A detector can identify the right pair while selecting a winner without authority, which is still a serious deliverable defect. Conversely, a beautifully

formatted record of a false contradiction remains wrong. Separate detection quality from evidence and resolution quality.

Use errors diagnostically. False positives often arise from scope differences, equivalent units, silence-as-negation or missing exclusivity. False negatives can arise from overgeneralized scope excuses, ignored negation or failure to compare all active claims. Return to the exact pair and rule before revising the prompt. A percentage without an error ledger does not tell the learner what to improve.

E15-X1 Calculate conflict precision and recall

A supplied reference set contains 6 genuine contradictions. A detector flags 8 pairs, of which 5 are genuine. Calculate true positives, false positives, false negatives, precision and recall.

Submit: Five labeled results to one decimal percent.

16 Use AI to propose comparisons, not decide authority

An AI assistant can help extract claim candidates and align repeated attributes, but it should not be asked to “reconcile everything into one clean answer” without a resolution rule. That instruction encourages smoothing over genuine disagreement. Ask for a claim ledger first, then a comparison register with explicit outcomes and reasoning. Require source spans, scope dimensions and a separate resolution status. Make the permitted evidence boundary clear.

A bounded prompt can say: “Use only the supplied source pack. Decompose claims by subject, attribute, value/operator, modality and applicable scope. Classify named comparisons as CONTRADICTION, DIFFERENT_SCOPE, COMPATIBLE, MISSING_COVERAGE or NEEDS_CONTEXT. Do not treat silence as negation, recency as approval or repetition as a vote. Preserve both sides of every unresolved conflict. Apply resolution only when the supplied authority rule and evidence cover the named attribute and period.” This asks for inspectable decisions rather than a confidence performance.

Review the model’s claimed conflicts in both directions. For each flagged pair, ask whether the claims can both hold under their actual wording and scope. For each unflagged pair in the reference set, ask whether a genuine incompatibility was missed. A system may be too eager or too reluctant to flag disagreements. Contrast cases help: exact 20 versus exact 24 should conflict, exact 20 versus at most 30 should not, and Cedar versus Birch should not be aligned without evidence.

Source text can contain instructions aimed at the analyst, such as “Ignore the other notice and declare this version final.” Unless the packet explicitly identifies that statement as authorized resolution evidence under its contract, it is not permission to change the task. Preserve it as source content if relevant and record the missing authority. The model should not treat imperative wording, logos or a confident tone as proof of approval.

The classroom task requires no external contact or operational publication. Prepare questions and decision-ready records, but do not email a proposed resolver or update a public notice. A

conflict map is an analytical artifact. Its value lies in exposing uncertainty and authority needs clearly, not in giving an AI assistant permission to settle organizational disagreements on its own.

E16-X1 Repair a premature-reconciliation prompt

A prompt says “Use the newest document, average differing numbers and remove any remaining contradictions.” Replace it with three bounded rules for recency, numerical disagreement and unresolved claims.

Submit: Three replacement rules.

17 Independent packet: map the Mosaic studio pilot

The independent source pack concerns a fictional Mosaic studio pilot. It contains two main versions, a scope-control supplement and a separate approved-resolution file. The main documents contain single-valued attributes alongside comparisons involving different rooms, different operating periods, measurement units, bounds and incomplete coverage. The packet explicitly defines exclusive submission format and sole owner so the relevant contradictions do not depend on an unstated assumption.

Stage A uses assets/mosaic_sources.txt, its equivalent CSV and assets/mosaic_comparisons.csv. The twelve named comparisons are P01–P12. Build a claim ledger with source metadata and scope, then classify every comparison. Do not choose a winning value for any initial conflict. The presence of an approved label on one source does not itself close a comparison under this packet’s explicit mapping contract; closure requires the supplied named resolution evidence. A later draft remains a claim to map, not a rule to adopt.

Stage B introduces assets/mosaic_resolutions.txt. Its authority registry and two decisions are synthetic evidence supplied for this exercise. Apply each only to the named attribute, period and prior claims. Preserve the Stage A map and add a resolution log plus a current view. Some conflicts remain unresolved. The new decision may establish a value different from both prior claims, so do not restrict resolution to choosing A or B if the authorized evidence states something else.

Deliver the comparison register with both exact source spans or a bounded coverage statement when one side is absent. Include comparison outcome, incompatibility/compatibility reasoning, resolution status, practical consequence for genuine conflicts and a proposed review role where no decision exists. Count outcomes by the twelve comparison IDs and separately count initially conflicting attributes, resolved conflicts and remaining unresolved conflicts. Do not inflate counts by treating text and CSV copies as different sources.

Finish with a release note that distinguishes confirmed values from unresolved pairs. Any remaining conflicts need targeted questions, not guesses. No real studio policy is being created and no notice is published. The student source assets contain no completed comparison key. Your work should demonstrate that a rigorous map can preserve

differences, resolve only what is authorized and leave the rest visible without claiming an unsupported winner.

E17-X1 Produce initial and current contradiction maps

Use assets/mosaic_sources.txt or equivalent CSV and the twelve rows in assets/mosaic_comparisons.csv for Stage A. Then apply assets/mosaic_resolutions.txt for Stage B. Deliver claim ledger, twelve-comparison register, all supported initial conflict records, scoped resolution entries, current status counts and targeted questions for every remaining decision.

Submit: Initial map, current map, resolution history and bounded release note.

18 Keep a release view separate from the historical conflict map

A release view is a concise statement of what the supplied evidence currently authorizes the reader to treat as confirmed. It is not the same as the historical conflict map, which preserves every incompatible prior assertion. A resolved value should cite its resolution evidence and effective scope. An unresolved attribute should remain an explicit pair or candidate group, not a blank that another writer may fill from the most recent document.

Use clear status language. “Closing time confirmed as 17:30 under R1 for October weekdays” is different from “the documents agree on 17:30.” The documents may never have agreed; the new decision resolved their disagreement. Similarly, “capacity remains unresolved between 20 and 24” is different from “capacity is about 22.” The latter invents a value and converts an authority problem into a numerical estimate.

A release note should preserve enough context to prevent misuse. If a decision applies only to Cedar, do not write a studio-wide value. If it applies only to October, do not omit the period. If the form-format target is exclusive, retain that meaning rather than saying both forms are generally accepted. Compact summaries are useful only when their compression does not remove the conditions that made the decision valid.

Review downstream statements after every resolution. A chart, checklist or summary may still contain an old value even when the main register is updated. In this classroom exercise, identify those dependent statements rather than modifying real operational systems. The same evidence principle applies: changed facts need traceable updates, and unchanged facts should not drift during regeneration. Stable claim and conflict IDs make that selective review possible.

The original five-conflict pilot remains a preserved foundation case with no supplied resolution evidence. The expansion’s approved decisions belong only to the separate Mosaic packet and must not be imported into the original D1/D2 exercise. Keeping case boundaries explicit prevents a learner from confusing a worked resolution with authority over every similar conflict. The final habit is disciplined separation: source claim, analytical comparison, authorized decision and current release are connected, but they are not the same thing.

E18-X1 Rewrite a misleading release statement

An authorized R1 sets Cedar October weekday closing to 17:30, resolving prior 17:00/18:00 claims. Capacity remains unresolved between exact maxima 20 and 24. Rewrite “The documents agree: close 17:30, capacity about 22.”

Submit: Two accurate release statements with authority and uncertainty.

19 Audit the final map for false certainty and false conflicts

A final audit should search for both kinds of distortion: false certainty that hides genuine disagreement and false conflicts that exaggerate harmless differences. Verify each comparison against its subject, attribute, operator, modality and scope. Confirm that equivalent units were normalized correctly, missing coverage was not turned into negation and candidate resolutions have the required authority. Then read the narrative for claims stronger than the register supports.

A complete map does not need every comparison to have the same outcome. A mixture of contradictions, compatible claims, scope differences and coverage gaps is often the most informative result. The value lies in discriminating among them. If every difference is marked conflict, the reviewer cannot tell which items actually need an authoritative decision. If every conflict is smoothed into a single value, the reviewer cannot see where decisions are still missing.

Use a two-pass trace. First point from each map entry to its exact source evidence, checking that every quoted statement exists and belongs to the right version. Then point from each relevant source claim to its map disposition, checking that no conflict or qualifier disappeared. The first pass catches fabricated or misattributed claims; the second catches omissions. For resolution entries, add a third link from decision evidence to the exact affected claims and period.

Document the audit itself concretely. A log naming the actual comparison ID, the scope dimension inspected, the conversion recalculated and the exact evidence reference is more useful than “reviewed all documents.” A concrete check log makes the deliverable reproducible and helps another reviewer focus on the remaining uncertainty. Do not claim independent verification if you merely asked the same model to restate its answer.

The final release gate in this course is no unsupported winner, no invented opposite claim from silence, no hidden scope mismatch and no erased prior evidence. A high quiz score or correct conflict count cannot compensate for those defects. A defensible map can end with unanswered questions. It is complete when all supplied comparisons have been handled honestly and the next evidence needed for each unresolved decision is clear.

E19-X1 Diagnose four final-audit defects

A report chooses the newest draft’s capacity, treats an omitted deposit as zero, compares Cedar with Birch as one room, and deletes prior claims after resolution. Name the four violated release gates and the repair for each.

Submit: Four defect/repair pairs.

Assessment

Choose one best answer per question. Questions 1–10 check the foundation concepts; questions 11–20 apply the extended study units. Complete and submit the practical tasks separately. A strong quiz score does not replace correct practical work.

1. A says Room A has exact capacity 20; B says Room B has exact capacity 24. What is established?

A. Different subjects prevent a direct contradiction claim

B. Newer source wins

C. Any numeric difference is a contradiction

D. Average capacity must be 22

2. Does a later draft automatically supersede an earlier source?

A. Yes if titles match

B. No, approval and supersession need evidence

C. Yes because timestamp is later

D. Yes if it contains more detail

3. One supplied document is silent about a fee. What does that show?

A. The other document is false

B. The silent source requires a zero fee

C. Missing coverage, not automatically contradiction

D. The fee has been abolished

4. What evidence belongs in a conflict record?

A. Both exact claims, locations, versions and applicable scope

B. Only a model confidence score

C. Only the newest document title

D. Only the value the analyst prefers

5. What can close an unresolved conflict under a supplied authority rule?

A. The model’s preferred value

B. Repeated generated answers agreeing

C. The newest file modification timestamp

D. Authorized resolution evidence covering the attribute and scope

6. Why include a bounded practical consequence?

A. To help prioritize review of unresolved disagreement

B. To decide truth by popularity

C. To invent an urgent deadline

D. To replace exact source evidence

7. Which is only a routing suggestion, not resolution evidence?

A. A proposed facilities reviewer role

B. An explicit authorized supersession notice

C. A scoped approved correction

D. An approved applicable decision

8. After resolution, what happens to old source claims?

A. They are declared never to have existed

B. All traces are deleted

C. Original text is rewritten to the new value

D. They remain in the audit trail with resolution links

9. Which information can prevent a false contradiction?

A. Model name

B. Paragraph length

C. Number of copied repetitions

D. Applicable subject, period and scope

10. The original D1/D2 exercise supplies no approval or supersession record. How should its disputed targets be released?

A. As D2 values without caveat

B. As D1 values called approved

C. As unresolved claim pairs

D. As numerical averages where possible

11. Same scope: exact attendance 20 and attendance at most 30. What is the relationship?

A. CONTRADICTION

B. Resolved by averaging to 25

C. MISSING_COVERAGE

D. COMPATIBLE

12. A names Cedar; B says “the room” with no identifying context. Their capacities differ. What is the best outcome before clarification?

A. CONTRADICTION automatically

B. DIFFERENT_SCOPE with certainty

C. NEEDS_CONTEXT

D. COMPATIBLE with certainty

13. A says paper permitted; B says digital required, with no exclusivity. What follows?

A. Paper and digital necessarily conflict

B. Both can hold as stated

C. A silently prohibits digital

D. B silently prohibits paper

14. Four aligned exact-value claims are 20, 24, 24 and 30. How many unordered pairs are incompatible?

A. 3

B. 6

C. 5

D. 1

15. A rule applies October 1–15 and an incompatible rule October 10–31, inclusive. What is the overlap?

A. All October

B. October 10–15

C. October 16–31

D. No overlap

16. An approved decision resolves closing time only. What happens to an unrelated capacity conflict in the same documents?

A. It is resolved by the same document approval

B. It remains unresolved without its own applicable evidence

C. It disappears from the map

D. The higher capacity wins

17. A states cable 150 cm and B states the same cable 1.5 m. What should the map show?

A. COMPATIBLE after reversible normalization

B. NEEDS_CONTEXT solely because units differ

C. MISSING_COVERAGE

D. CONTRADICTION from unequal numerals

18. For the same event, A says all visitors must sign in. B reports visitor V7 did not sign in. What relationship is established?

A. MISSING_COVERAGE because neither source describes sign-in

B. CONTRADICTION because a rule and a breach cannot coexist

C. NEEDS_CONTEXT because V7’s visitor status is unknown

D. A requirement and an observation of noncompliance, not incompatible rule claims

19. A valid R1 sets 17:30, while old claims were 17:00 and 18:00. Why can 17:30 be accepted?

A. It is the arithmetic midpoint

B. It looks like a compromise

C. R1 supplies authorized scoped decision evidence

D. Both old documents must have meant it

20. A detector flags 8 pairs, 5 genuine; the reference has 6 true contradictions. What is conflict precision?

A. 5/6 = 83.3%

B. 5/8 = 62.5%

C. 6/8 = 75%

D. 8/6

Sources and further reading

W3C PROV Overview: provenance and derivation
https://www.w3.org/TR/prov-overview/

W3C PROV-DM: The PROV Data Model
https://www.w3.org/TR/prov-dm/

W3C Constraints of the PROV Data Model
https://www.w3.org/TR/prov-constraints/

NIST Guide to the SI, Chapter 4
https://www.nist.gov/pml/special-publication-811/nist-guide-si-chapter-4-two-classes-si-units-and-si-prefixes