

Min	Task	Focus
0-3	Preview	Identify the problem with narrative SAPs.
3-14	360i	Semantic backbone, amendment impact and Analysis Concepts.
14-21	US Interchange	Read the Version 1 executable-analysis abstract.
21-25	ARS	Inspect analyses, analysis sets, outputs and code.
25-30	Output	Convert one SAP sentence into metadata.

KEY VOCABULARY

Term	中文	Meaning / use
analysis concept	分析概念	A structured, reusable definition of analytical intent, separate from study-specific code.
derivation concept	派生概念	A reusable definition of how data should be transformed or derived.
specification layer	规格定义层	The semantic, language-agnostic layer describing what the analysis means.
execution layer	执行层	The implementation layer that binds analytical intent to data and executable code.
data binding	数据绑定	A link between an abstract analysis concept and concrete variables, datasets, or code.
machine-readable	机器可读的	Structured so software can interpret and act on the content directly.
executable specification	可执行规格	A specification detailed and structured enough to drive automated analysis.
bidirectional traceability	双向可追溯性	The ability to move from source intent to result and from result back to its source.
semantic backbone	语义骨架	Shared structured meaning that connects study design, data, analysis, and outputs.
impact analysis	影响分析	Identification of downstream artifacts affected by an upstream change.
reporting event	报告事件	A structured context in ARS that groups analyses and outputs for a reporting purpose.
analysis set	分析集	The defined subject population included in a statistical analysis.
analysis result data	分析结果数据	Structured result data that can be reused independently of a rendered table.
platform-independent	平台无关的	Defined without depending on SAS, R, Python, or another specific execution platform.
smartphrase	结构化短语 / 智能短语	A reusable human-readable expression that connects narrative analytical language to structured concepts.

USEFUL PHRASES

1. **separate analytical intent from implementation** - *The framework separates analytical intent from implementation.*
2. **make the SAP machine-readable and testable** - *The goal is to make the SAP machine-readable and testable.*
3. **bind abstract concepts to study-specific data** - *The execution layer binds abstract concepts to study-specific data.*
4. **trace a result back to the original endpoint** - *A reviewer should be able to trace a result back to the original endpoint.*
5. **propagate an amendment through connected artifacts** - *Structured metadata can propagate an amendment through connected artifacts.*
6. **replace narrative ambiguity with explicit metadata** - *The design replaces narrative ambiguity with explicit metadata.*
7. **support language-agnostic specification** - *The specification should support language-agnostic analysis intent.*
8. **generate code from controlled analysis definitions** - *Code can be generated from controlled analysis definitions.*
9. **keep computation reproducible across implementations** - *The same analytical definition should keep computation reproducible across implementations.*
10. **turn review from reconstruction into verification** - *Traceability can turn review from reconstruction into verification.*

COMPREHENSION QUESTIONS

1. Why are narrative-only SAPs difficult to automate?
2. What is the difference between specification and execution?
3. Why does the PFS amendment example matter to SP teams?
4. How does ARS complement Analysis Concepts?
5. Which SP responsibilities become more important when analysis definitions are machine-readable?

RETELLING PROMPTS

30 sec: Narrative SAP problem -> Analysis Concepts solution.

45 sec: Objective -> endpoint -> concept -> ADaM binding -> execution -> result -> TFL.

60 sec: Explain why executable metadata does not eliminate statistical programmers.

5-MINUTE SPEAKING / OUTPUT TASK

Minute 1: Choose TEAE, lab change, demographics, ORR, PFS or disposition.

Minutes 2-3: Separate analytical intent from ADaM/code bindings.

Minute 4: Add objective-to-TFL traceability and amendment impact.

Minute 5: Explain which decisions still require programmer and statistician review.

ONE SENTENCE TO KEEP

Executable analysis metadata does not remove statistical programming; it moves ambiguity out of the code and makes analytical intent, implementation, and results traceable as separate but connected objects.