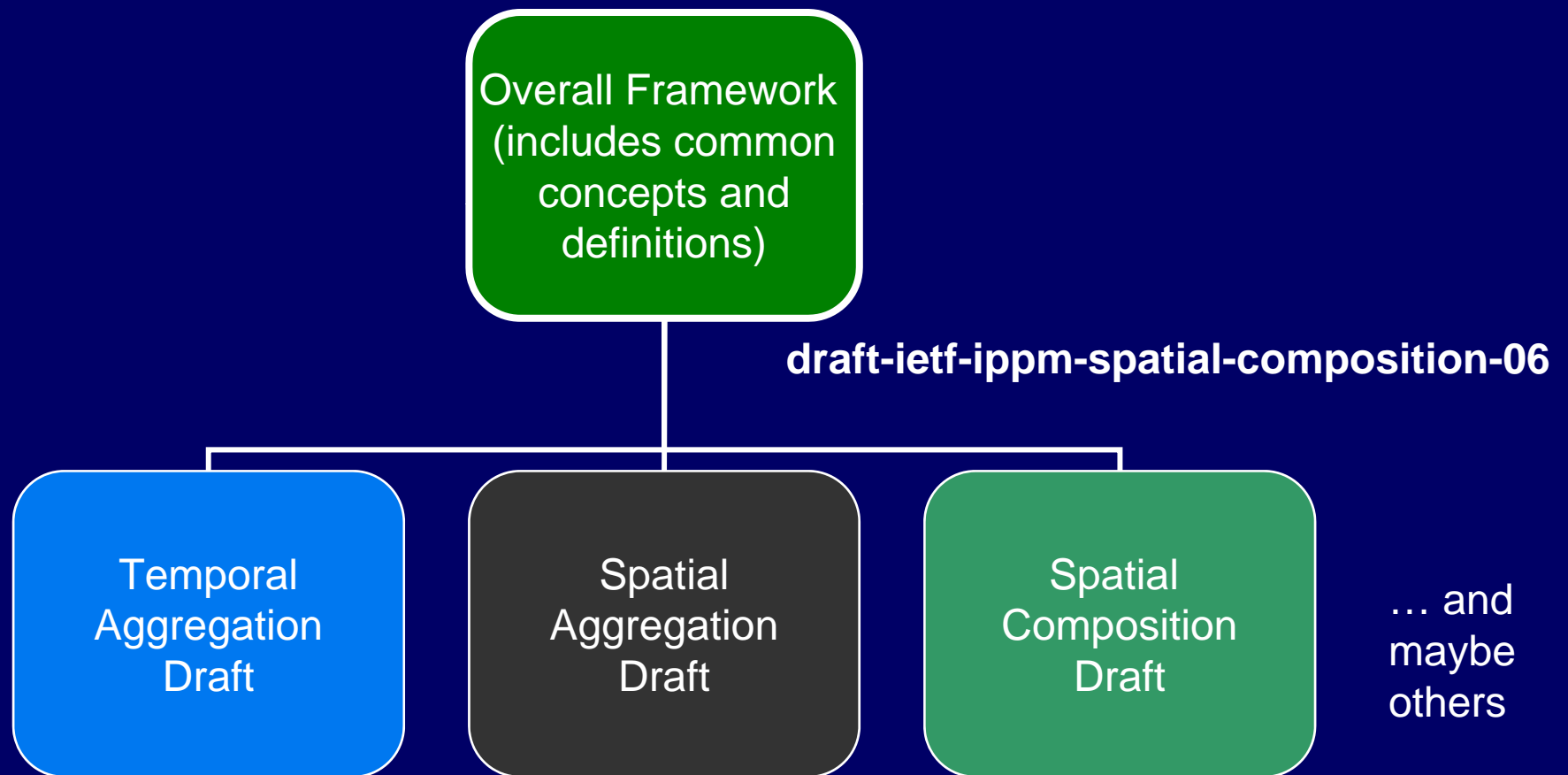# Framework for Metric Composition +
Spatial Composition of Metrics

Al Morton + many others
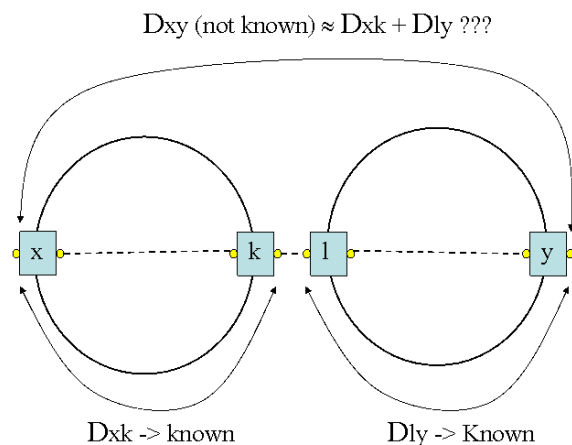**March, 2008**

draft-ietf-ippm-framework-compagg-06.txt

Overall Framework (includes common concepts and definitions)

draft-ietf-ippm-spatial-composition-06

Temporal Aggregation Draft

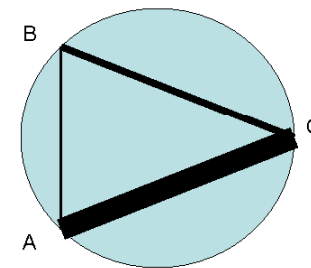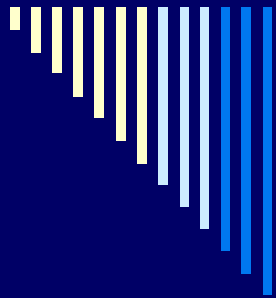Spatial Aggregation Draft

Spatial Composition Draft

… and maybe others

Types of Composition

- Complete/Sub-Path (or Concatenation in Space)

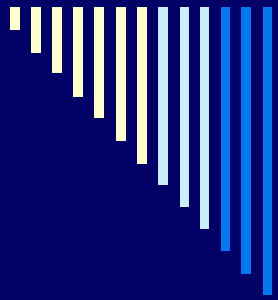- Aggregation in Time (12x5min stats ->1hr)
- Aggregat. in Space

$$D_{xy} \text{ (not known)} \approx D_{xk} + D_{ly} \; ???$$

D_{xk} -> known D_{ly} -> Known

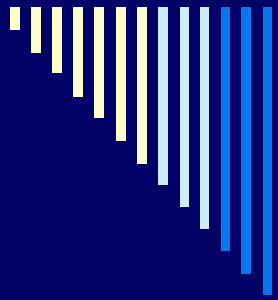|	Delay	Load
A-B	24.5 ms	1 Gbit/s
B-C	7.8 ms	3 Gbit/s
A-C	4 ms	9 Gbit/s
Domain	1/13*24.5+3/13*7.8+9/13*4 = 6.4 ms	13 Gbit/s

Comments on 05 (pre-IETF70)

Reza Fardid

- Section 3.6 R-factor is a valid example of an index as defined here, however, it is composed of both IP performance metrics and analog metrics. In scope ?
  - Loki's point: Scope is Loss, Delay, and Delay Variation
  - Revised the Definition – Index is the result of a deterministic function and separate from the composition and aggregation
  - Refined example – now just the packet loss $I_{e\text{-eff}}$
  - This might fit better in the PMOL framework…
- Another example index composed of IP performance metrics is MDI, per rfc4445
  - Avoid referencing RFC Editor submissions

Comments on 05

Reza Fardid

☐ Section 4.1 Is the comment referring to forecasting of one metric from another, whose temporally aggregated measurements are available?

  ■ Clarified that this describes prediction among identical metrics
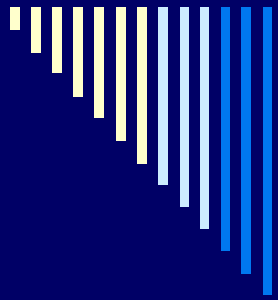
Comments on 05

Reza Fardid

☐ Section 4.5 Higher-order Composition: Another example will be helpful here.

   ■ Clarified the existing spatial comp example and added a temporal aggregation example.
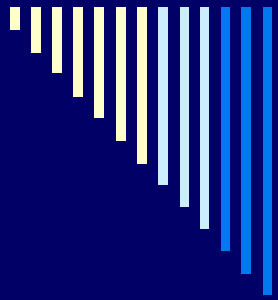
Recent Comments on 05

Loki Jorgenson

- Section 3.2 - reference to "true path" with no entry under Terminology to define it. Suggest changing it to something more like "actual" (as used in "ground truth").
  - Agreed
- Section 5. - As I was dealing with IPR issues today and aspects of viral licensing, is it appropriate to include in any composition metric description IP references to embedded proprietary metrics and/or use of standards?
  - Standards may or may not have IPR
  - Added point at end of section: If IPR in the process, then Composed Metric may be encumbered, see BCP 79
- Section 4.1 – caution needed with regard to time-varying vs. time-invariant metrics
  - New section 6.4 deals with time varying metrics (concerns are not unique to composition)

Status of Framework 06

- Next Steps
  - Address the recent comments?
  - Consider this text sufficiently stable?
  - If so, Convince more folks to Read and Comment on…

Status: Spatial Composition 06

- Revisions to Outline to keep in step with Framework Modifications up to 05
  - "true foo" became "ground truth foo"
- NEXT STEPS:
  - Need Volunteers to read and comment