Key Performance Metrics

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What Are Key Performance Metrics?

- Metrics adopted by DM to allow us to measure progress through construction.

- Subset of SRD performance metrics: LSR-REQ-0093, LSR-REQ-0094, LSR-REQ-0097, LSR-REQ-0101

  - e.g. OTT1 (alert reporting time), AM1 (relative astrometric error)

- No flow down to DMSR from LSR at the moment (working on it).

- DM performance metrics (query performance, SUI responsiveness)

- DM compute resources

- Targets tighten as we approach acceptance (SRD is the end game).

KPM	Title	Target	S14	S15	F16	F17	F18	F19	F20	F21
DLP-59	Long-Haul Network Bandwidth	10.0 Gbps								
DLP-290	Residual PSF Ellipticity Correlations: TE1	2.0 (unitless) * 1e-5	500.0	100.0	10.0	3.0	3.0	2.0	2.0	
DLP-307	Photometric Repeatability: procCalRep	3.0 mmag	13.0	10.0	5.0	5.0	4.0	3.5	3.0	
DLP-308	Residual PSF Ellipticity Correlations: TE2	1.0 (unitless) * 1e-7	50000.0	10000.0	100.0	3.0	3.0	2.0	1.0	
DLP-309	Absolute Astrometry: AA1	50.0 mas					100.0	75.0	50.0	
DLP-310	Relative Astrometry: AM1	10.0 mas	60.0	50.0	30.0	30.0	20.0	15.0	10.0	
DLP-311	Relative Astrometry: AM2	10.0 mas	60.0	50.0	30.0	30.0	20.0	15.0	10.0	
DLP-312	Relative Astrometry: AM3	15.0 mas	75.0	50.0	40.0	40.0	30.0	20.0	15.0	
DLP-313	Relative Astrometry: AB1	10.0 mas			30.0	30.0	20.0	15.0	10.0	
DLP-314	DRP Computational Budget (DR1)	108.0 TFLOPS	645.0	215.0	161.0	151.0	129.0	108.0	108.0	
DLP-315	Photometric repeatability: PA1gri	5.0 mmag	13.0	12.0	8.0	8.0	6.0	5.5	5.0	
DLP-316	Photometric repeatability: PA1uzy	7.5 mmag	14.0	13.0	12.0	12.0	8.0	8.0	7.5	
DLP-317	Photometric Spatial Uniformity: PA3u	20.0 mmag				40.0	30.0	20.0	20.0	
DLP-318	Photometric Spatial Uniformity: PA3g	10.0 mmag				30.0	15.0	10.0	10.0	
DLP-319	Photometric Spatial Uniformity: PA3y	10.0 mmag				30.0	15.0	10.0	10.0	
DLP-320	Color Zero-point Accuracy: PA5	5.0 mmag				30.0	20.0	10.0	5.0	
DLP-321	Color Zero-point Accuracy: PA5u	10.0 mmag				50.0	30.0	15.0	10.0	
DLP-322	Absolute Photometry Accuracy: PA6	10.0 mmag					30.0	20.0	10.0	
DLP-323	Moving Object Linkage Efficiency: orbitCompleteness	95.0 percent			75.0	85.0	90.0	95.0		
DLP-324	Spuriousness Metric Efficiency: transCompletenessMin	90.0 percent				50.0	70.0	80.0	90.0	
DLP-325	Spuriousness Metric Efficiency: transPurityMin	95.0 percent				80.0	85.0	90.0	95.0	
DLP-326	Spuriousness Metric Efficiency: mopsCompletenessMin	99.0 percent				75.0	85.0	95.0	99.0	
DLP-327	Spuriousness Metric Efficiency: mopsPurityMin	50.0 percent				25.0	40.0	45.0	50.0	
DLP-328	Computational Performance Metrics: OTT1	60.0 seconds	240.0	240.0	240.0	180.0	120.0	90.0	60.0	
DLP-329	Computational Performance Metrics: AP computational budg	39.0 TFLOPS	231.0	193.0	154.0	77.0	58.0	58.0	39.0	

But...

- Each release should be accompanied by a characterization report including an assessment of the current KPMs.

- Annual assessment of KPM progress.

- Originally a SQuaRE responsibility to calculate KPMs and report on KPMs.

- Now calculation is done by teams… but probably not for v13.0 release.

- KPMs do not seem to be treated as a priority by management and delivery not owned by a single person.

- Do we abandon characterization reports for releases?
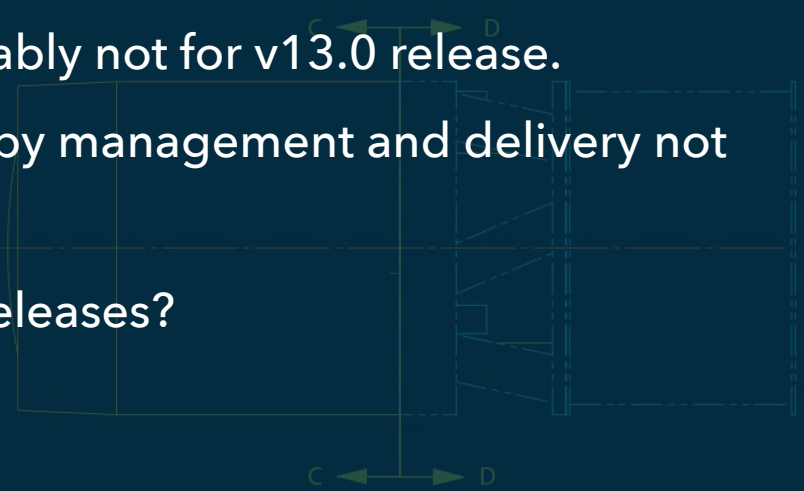
Future

- Desire to do regular calculation of KPMs independently of cycle releases: spot regressions as soon as possible.

- Include any metrics, for example algorithm timing, not just KPMs.

- Integral part of SQuaRE QC system.

- Metric calculation code for pipelines has to be included in plan.

- Need to consider how the DB, UI and compute metrics are automated.

- We have told Systems Engineering that this continuous assessment of metrics is part of our development plan (and they really liked the approach).