Introduction to HDD Field Assessable Reliability Metrics (FARM)

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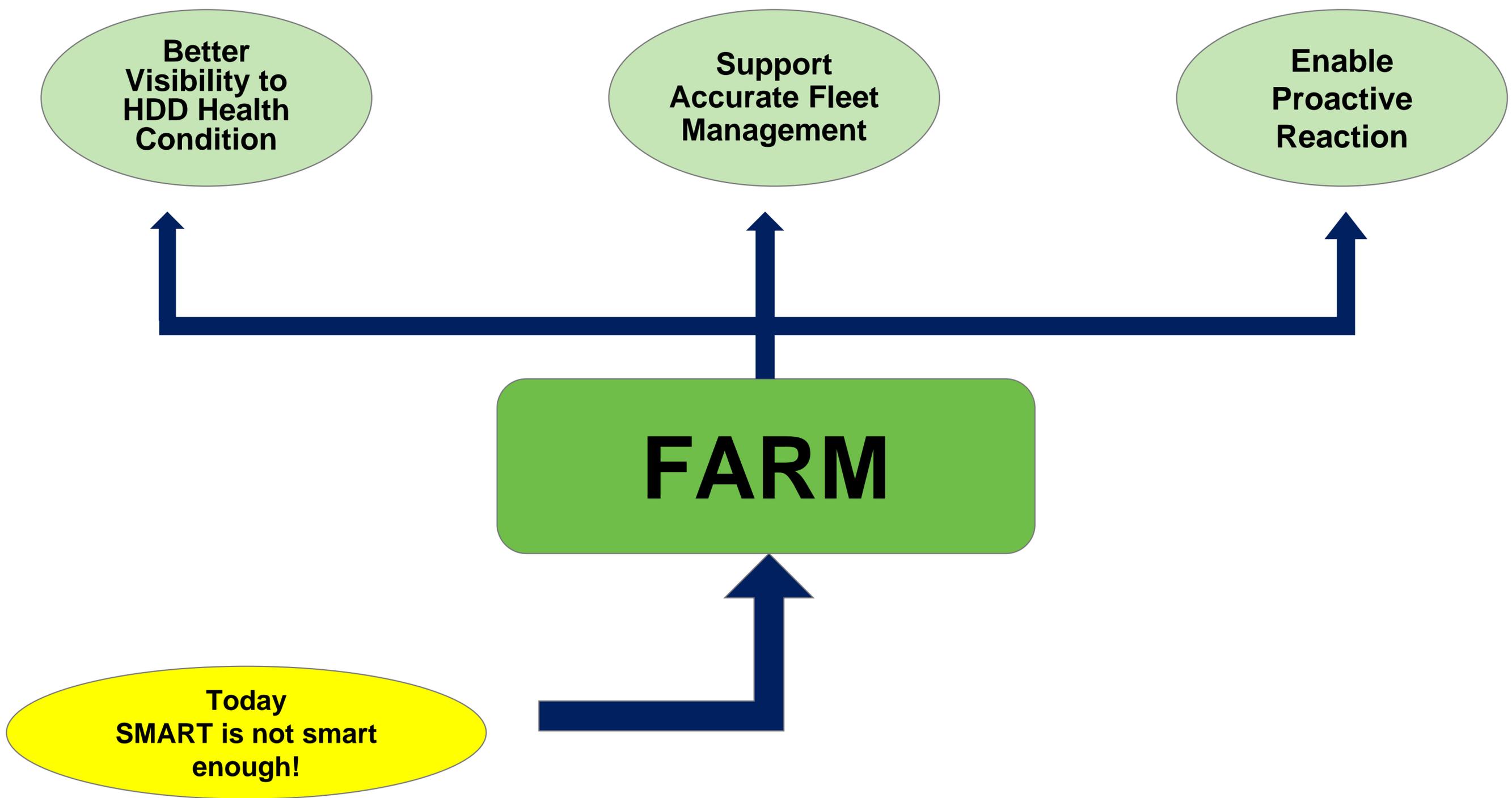
Technologist

Seagate Technology

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Why FARM?

Better Visibility to HDD Health Condition

Support Accurate Fleet Management

Enable Proactive Reaction

FARM

Today SMART is not smart enough!

What is FARM?

Intent : Provide a data structure that enables Fleet Management and Failure Prediction with visibility and open access to device metrics

- FARM log provides access to metrics that capture HDD health, drive use and environmental parameters

- <u>Monitoring FARM log data</u> enables and supports HDD failure prediction (recommend daily/hrly)

- FARM is designed with ease of use in mind and all metrics are <u>accessible</u> and <u>are readable by humans</u>

FARM Basics

- ❖ Size: 96KB
- ❖ Log structure is based on pages (32 512-byte blocks)
- ❖ Log Structure has Five Pages Implemented and resolves security concerns on content visibility
- ❖ Includes HDD metrics at Device and <u>Head level</u>
- ❖ Statistical groups combined into single pages
- ❖ ~100 different metrics available to customers
- ❖ Data are self-describing
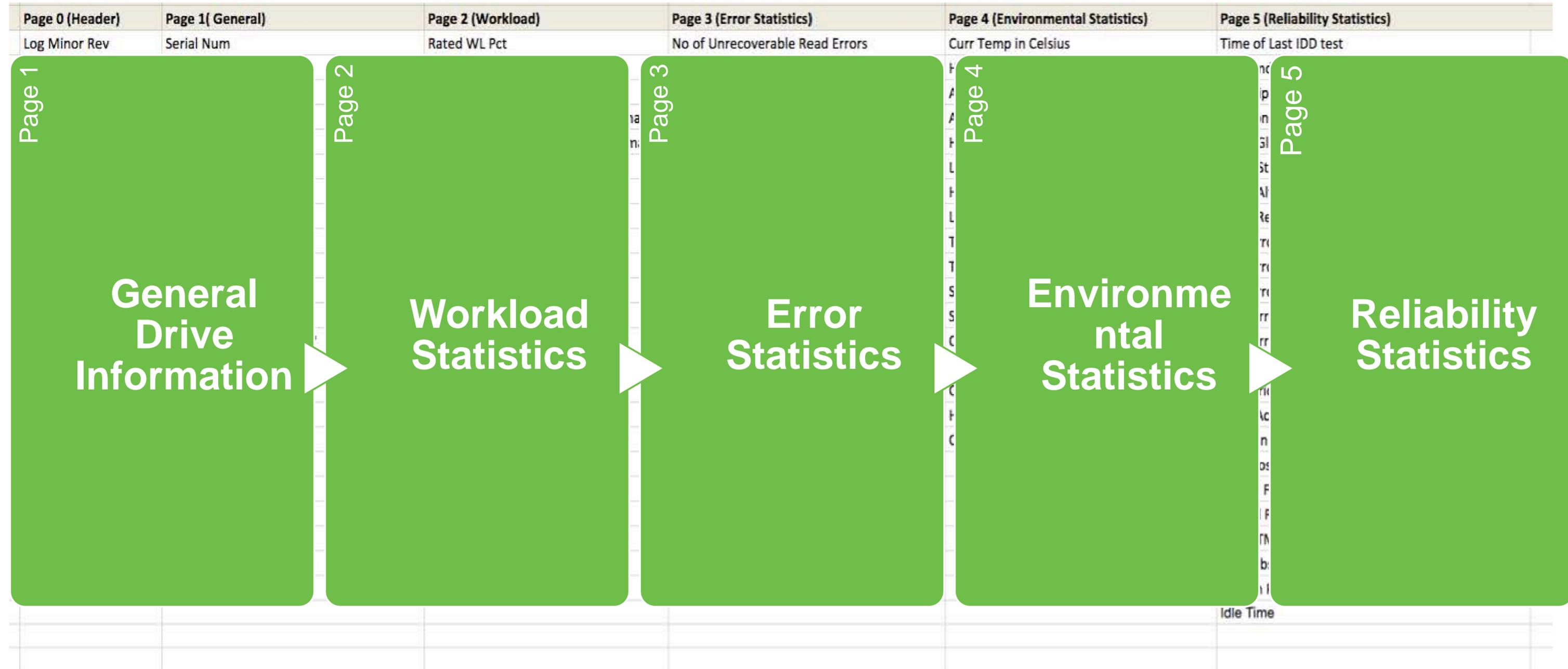- ❖ All log pages are the same length

FARM Basics

❖ Available via SAS and SATA Interfaces

❖ Contain vendor unique log (address: 0xA6 (SATA)

❖ Enhancements to FARM Metrics will be reviewed on an ongoing basis to improve drive health monitoring and failure prediction

FARM Log Page Metrics

Page 0 (Header)	Page 1(General)	Page 2 (Workload)	Page 3 (Error Statistics)	Page 4 (Environmental Statistics)	Page 5 (Reliability Statistics)
Log Minor Rev	Serial Num	Rated WL Pct	No of Unrecoverable Read Errors	Curr Temp in Celsius	Time of Last IDD test

Page 1 — General Drive Information → **Page 2** — Workload Statistics → **Page 3** — Error Statistics → **Page 4** — Environmental Statistics → **Page 5** — Reliability Statistics

Idle Time

Next Step …

Useful?

Contact your Seagate Representatives!