How To Achieve the AI Multiplier Effect

McKinsey Reports 10-15% Productive Use

Primary Use Case is Feature Enhancement

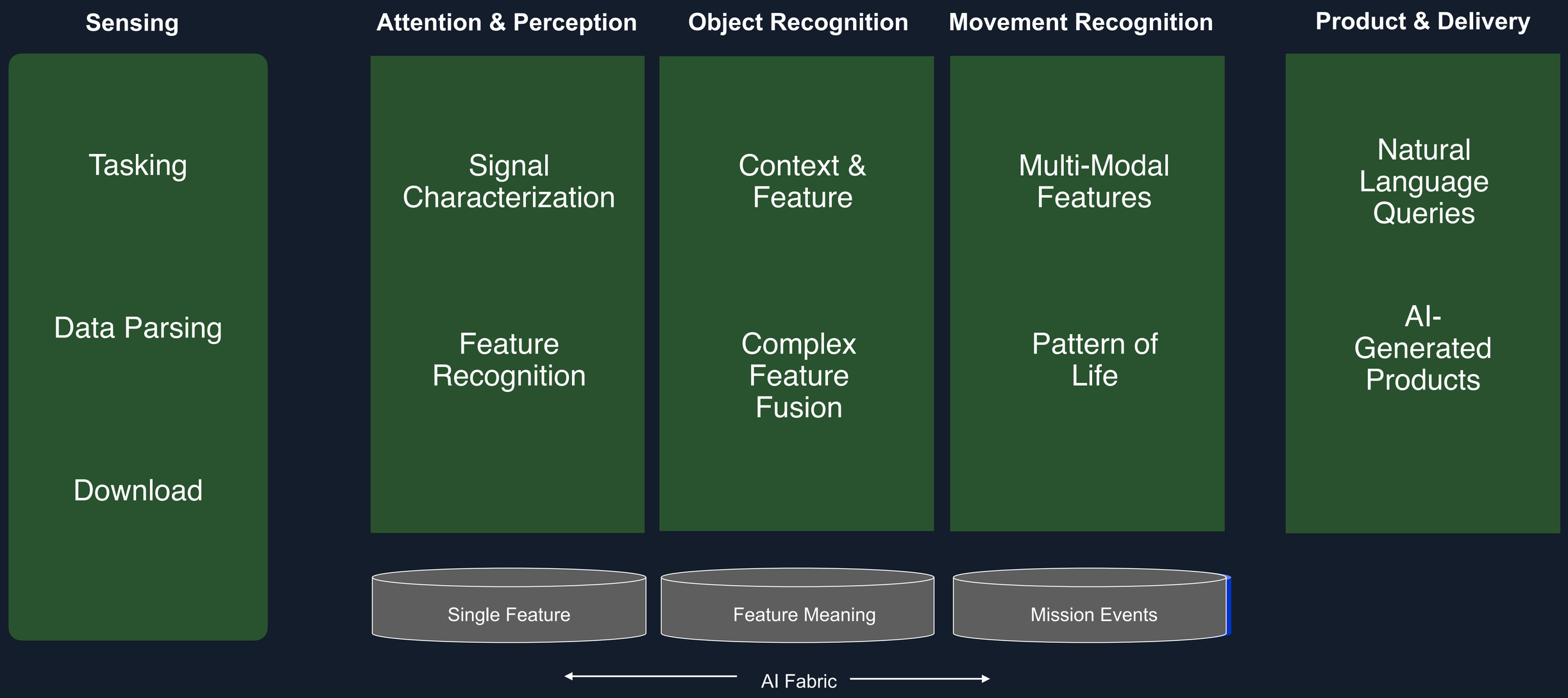
Create an AI Fabric at the Systems Level

Opportunities to AI-enable the Space Product Lifecycle

Orient	Sense	See	Understand	Product
Use AI to Find, Collect & Downlink Data	Detect Features & Parts of Features	Use Context & Relationships to Imbue Features with Meaning	Fuse Multiple Phenomenologies to Understand Events Over Time	Customers can Query AI or have Product Delivered Via AI

AI Fabric

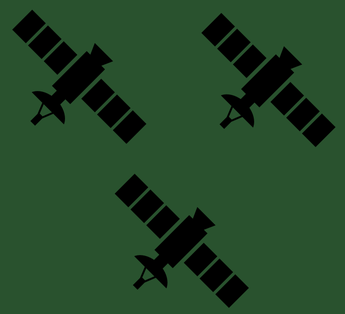
A Variety of Opportunities to Process Space Data with AI



AI Satellite Tasking & Collection Control

Sensing | **Attention & Perception** | **Object Recognition** | **Movement Recognition** | **Product & Delivery**

Tasking Optimization



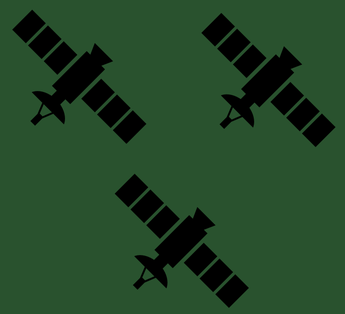
Data Blocks Identification

Download Optimization

AI Facilitates Detection & Identification

Sensing

Tasking Optimization



Data Blocks Identification

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Attention & Perception

Raw Data

Data Reduction

Raw Recording

AI Pre-processing

Features

Feature Extraction

Coarse Classification

Subclass identification

Feature identification

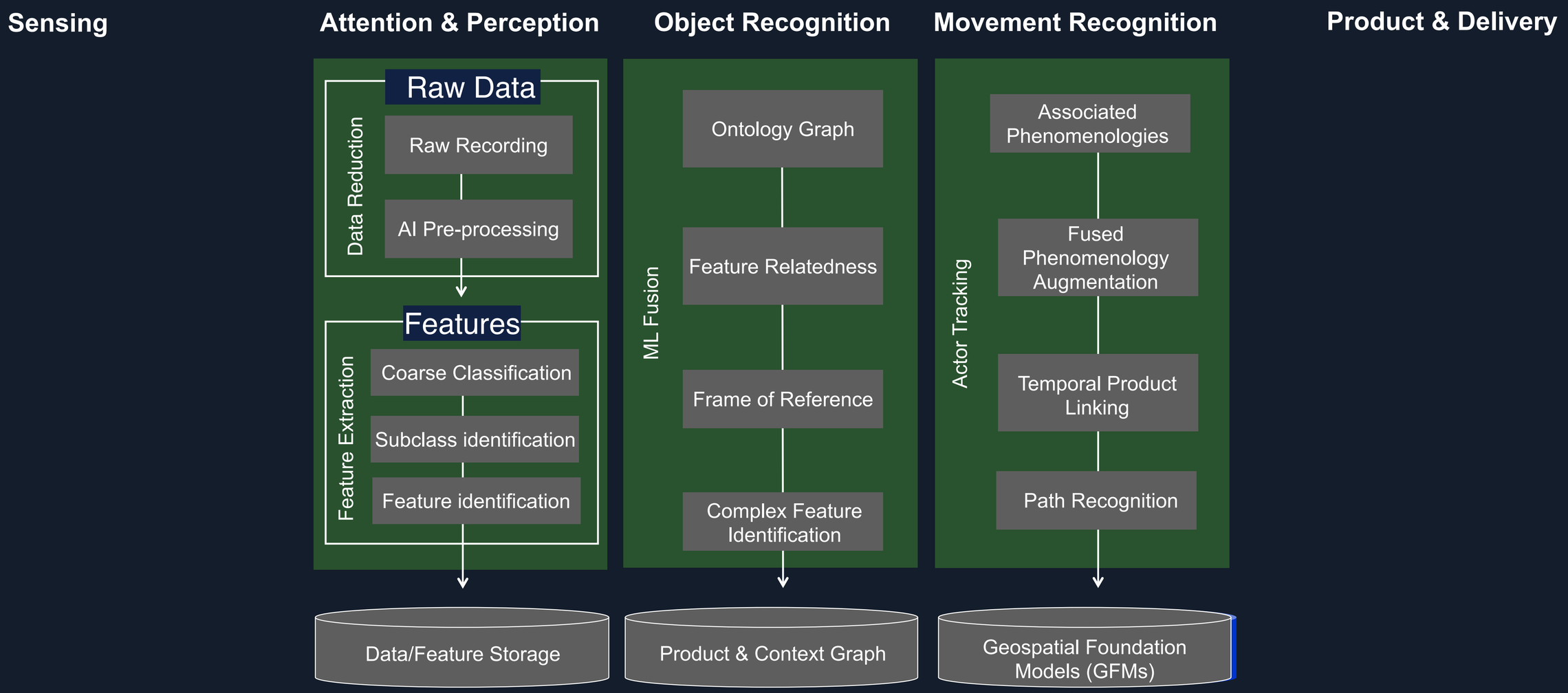
Data/Feature Storage

Object Recognition

Movement Recognition

Product & Delivery

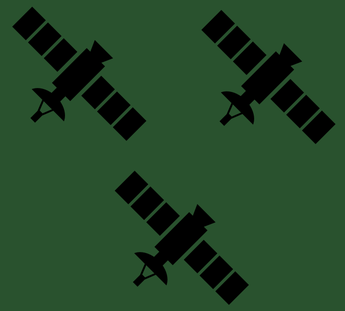
AI’s Role in Satellite Product Fabrication



AI-Enhanced Satellite Product Architecture

Sensing

Tasking Optimization



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Attention & Perception

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Subclass identification

Feature identification

Data/Feature Storage

Object Recognition

ML Fusion

Ontology Graph

Feature Relatedness

Frame of Reference

Complex Feature Identification

Product & Context Graph

Movement Recognition

Actor Tracking

Associated Phenomenologies

Fused Phenomenology Augmentation

Temporal Product Linking

Path Recognition

Geospatial Foundation Models (GFMs)

Product & Delivery

GFM Q&A

Raw Data Collects

Features of Interest

Objects of Interest

Area Monitoring

Target Monitoring

Mission Event Alerts

AI-Generated Reports

An AI Fabric Unifies & Amplifies Individual AI Enhancements

Orient	Sense	See	Understand	Product
Satellite Control & Data Acquisition Models	Signal Characterization & Feature Extraction Models	Create Feature, Object, and Context Graphs	Multi-Modal Feature & Event Models Geo-Spatial Foundation Models	Customers can Query AI or have Product Delivered Via AI
Control Models	**Detection Models**	**Mixed Models**	**Foundation Models**	**Language Models**