Proposed Updates To *PackSpec*
To Enhance PackML Requirements

Tom Doney – Nestlé
Pack Expo East 2015

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Tom Doney
Expert Engineer
Nestec - PTC - Marysville

Career Summary

- **10/98 to Present – Nestle PTC New Milford & PTC Marysville Expert Engineer, Packaging Development, RTD Technology (current)**
- **2/89 to 10/98 - Kraft Foods, Global Technology, Tarrytown NY**
  Staff Engineer, Packaging Equipment Development
- 4/86 to 2/89 – Robotic Vision Systems, Inc., Systems Engineer,
  Controller Development & Programming for Automotive & Heavy Welding Systems
- 7/74 to 12/84 – Leeds & Northrup Inc., Project Engineer,
  Design, Fabricate & Test Electric Utility Steam Generation Control Systems

Education

- **BS Electrical Engineering, Drexel University**
- **MS Manufacturing Systems Engineering, Lehigh University**
- **MS Computer Engineering, Manhattan College**.

Technical Interests/Expertise

- **Packaging Machinery & Packaging Systems**
- **Equipment Development**
- **Machine Vision Systems**
- **Robotics**
- **RFID**
- **PLC Programming**

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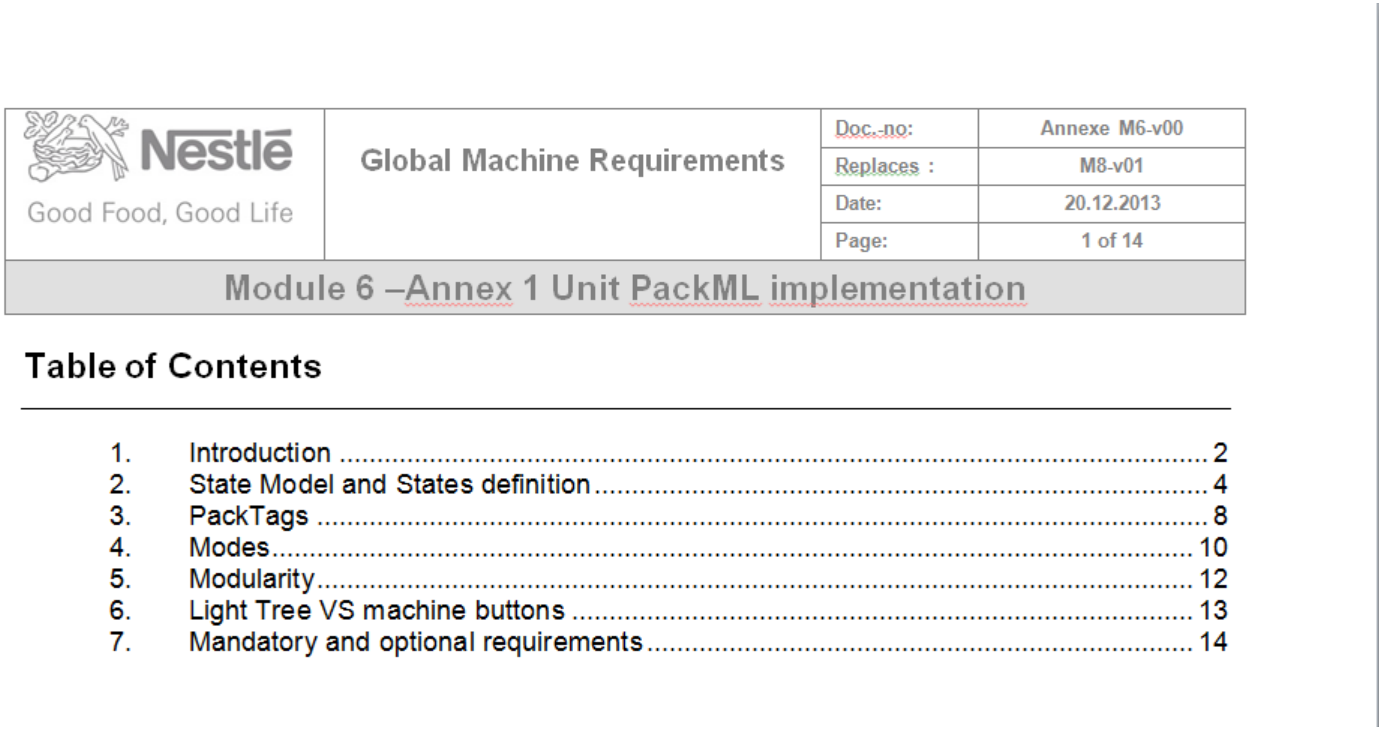
How Nestlé Assimilates PackML



Nestlé Good Food, Good Life	Global Machine Requirements	Doc.-no:	Annexe M6-v00
		Replaces :	M8-v01
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Module 6 –Annex 1 Unit PackML implementation

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Proposal – Two Tier PackML Compliance

- **Level B – Lesser degree of Compliance**
  - *PackTags communicate machine status*
  - *Operator Interface conforms to common "look and feel"*
  - *Visual alarms (stack lights on machines) comply with a standard structure and meaning*
- **Level A – The Full "Enchilada"**
  - *A unit operation's control programming is fully compliant with PackML*
  - *PackTags communicate machine status*
  - *Control software fully compliant to support state model control and communication*
  - *Operator Interface conforms to common "look and feel"*
  - *Visual alarms (stack lights on machines) comply with a standard structure and meaning*

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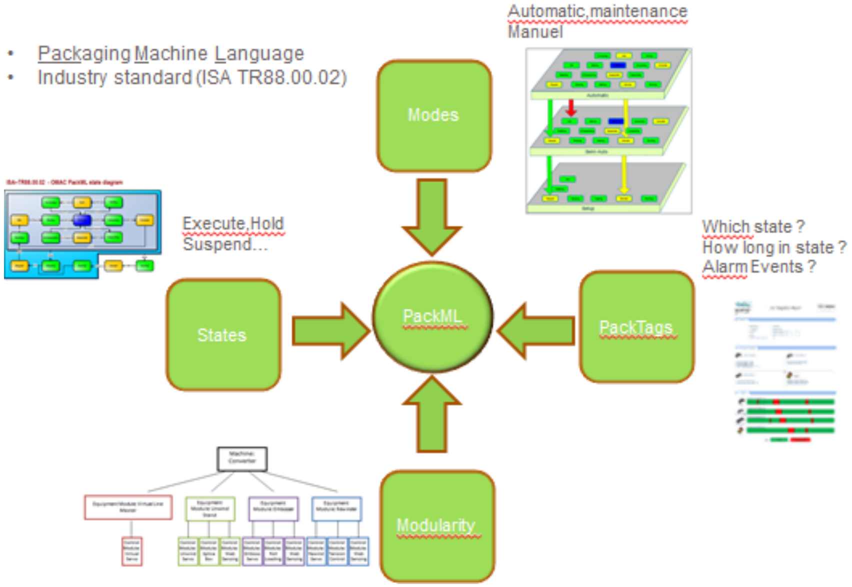
Reason For PackML – End User

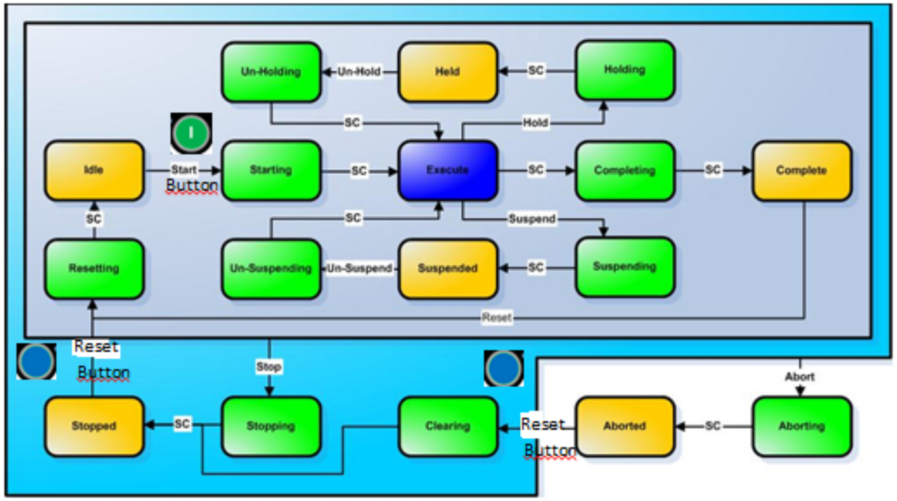
- For an end user, PackML enables information integration with other machines in the packing line, with a line controller, and with a MES layer of control by means of a common communication language



- Packaging Machine Language
- Industry standard (ISA TR88.00.02)

Reason For PackML – End User (Cont’d)

- PackML also provides for common status, operation information, and fault information on HMI’s – a common look and feel on the Packaging Line from filler to stretch wrapper



Proposed addition to PackSpec

Reason for PackML – End User (cont’d)

Machine States vs Light States	Aborting	Aborted	Clearing	Stopping	Stopped	esetting	Idle	Starting	Execute	Holding	Held (no production)	Unholding	Suspending	Suspended	Unsuspending
Red Light Flashing	F	F	F												
Red light Steady				S	S										
Amber Light Flashing (Starved)													F	F	
Amber Light Steady (Blocked)													S	S	
Green Light Flashing							F								
Green Light Steady								S	S			S			S
Blue Light Flashing (Does not changed a model state)	F	F	🟦	F	F	F	F	F	F			F	F	F	F
Blue Light Steady										S	S				
Buzzer 2 sec								F				F			F
Start Button Flashing							F								
Start Button Steady								S	S			S	S	S	
Reset Button Flashing	F	F													

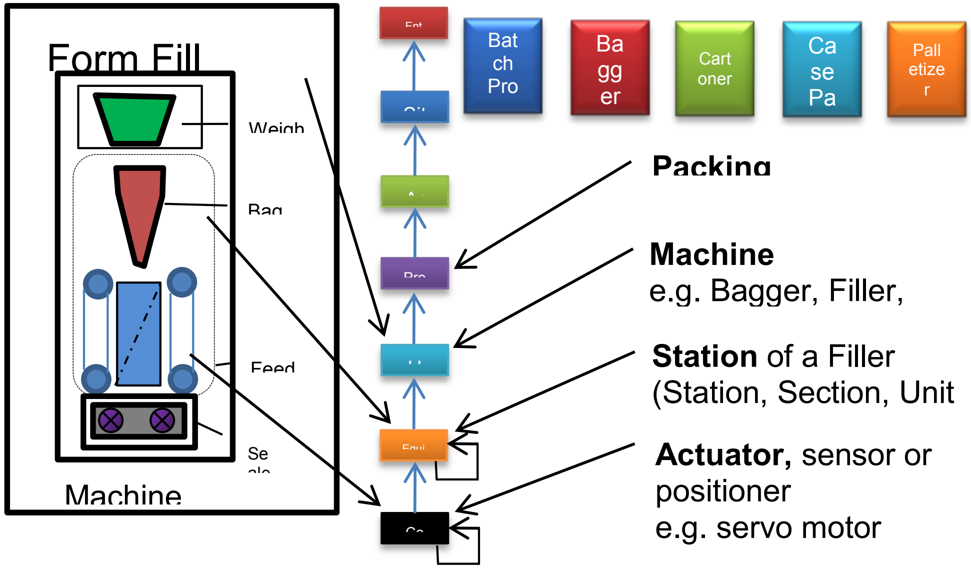
Proposed addition to PackSpec

- Can facilitate a common look and feel for visual status indication along the entire packing line with a standard pushbutton and status light indication

Full Compliance

5.1 Definition

Modular programming means that the software code is organized into reusable blocks of code. The ISA88 physical hierarchy is the most commonly used method to decompose a machine and define what blocks of code will be used, for example:



Packing

Machine
e.g. Bagger, Filler,

Station of a Filler
(Station, Section, Unit

Actuator, sensor or
positioner
e.g. servo motor

A Question on Integration to Integrator Community

- How To Verify Minimal Compliance?
  - What should an OEM be prepared for?
  - What is the process for verification at an FAT?
    - Screen Content
    - Status Lamp Behavior
    - Communication Testing

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