



Keeping people safer

with 3M™ Reflective Technology

Updates 2013



3M Australia and New Zealand are now one organisation

- Australia and New Zealand operate on common systems.
- Expands our resources.
- Gives us a bigger voice internationally
- Opportunities to be a regional resource for local and APAC markets.

3M and Federal Signal Technologies



- Diamond Consulting – Idris Vehicle Identification



- Federal APD – Automated Parking Devices



- PIPS Technology – Cameras and Automated License Plate Recognition (ALPR)



- Sirit – Transponders, Readers, and RFID Technology

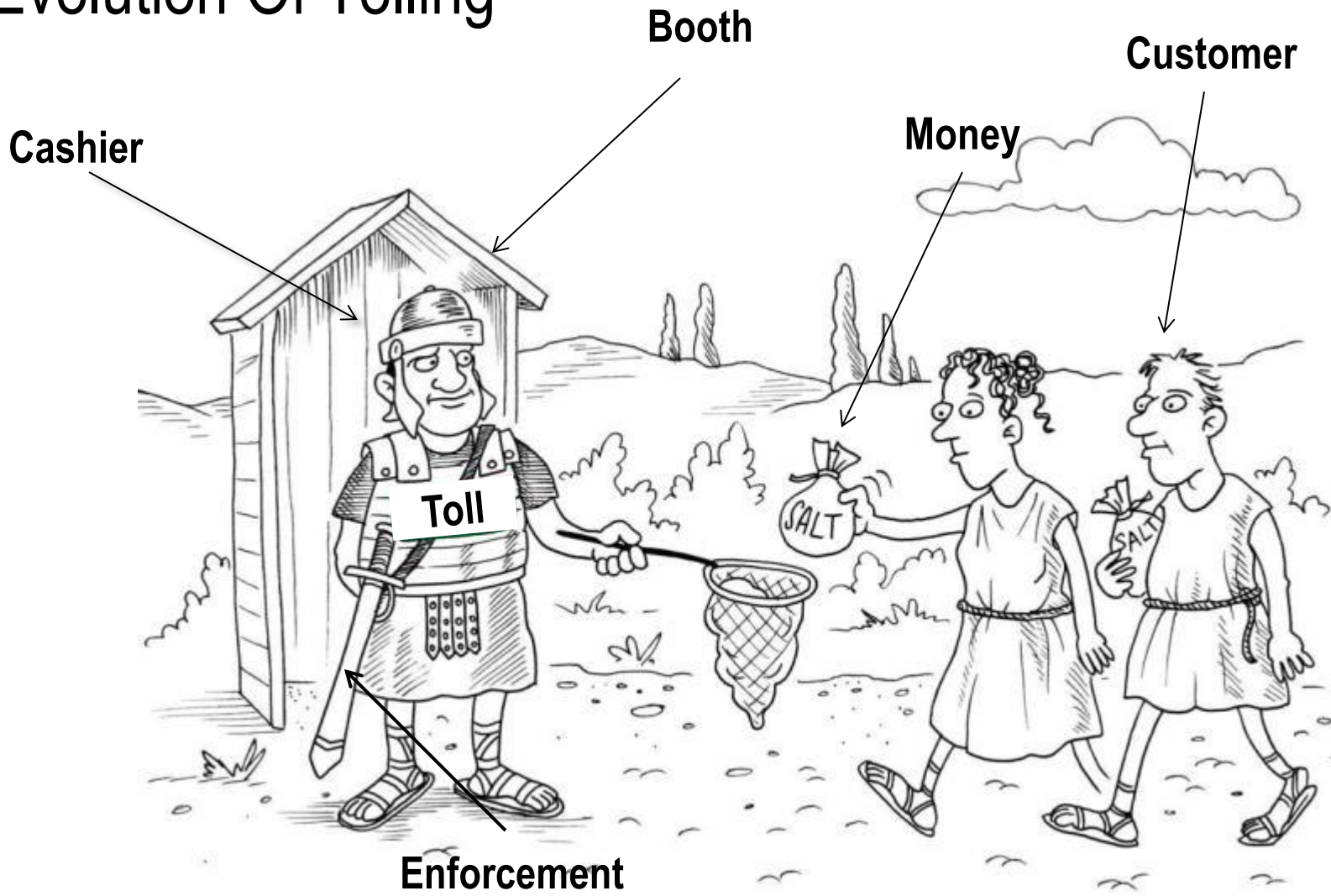


- VESystems – Back-Office Systems, Operational Expertise



- FS Technologies - Lane systems and integration

Evolution Of Tolling



Challenges for License Plate Reading

■ Plate Design

- *Fonts & Graphics Variations*
- *Repeated Alpha Numeric*



■ Plate Construction

- *Embossed vs. Flat Plates*
- *Reflective Properties of Sheeting*
- *Printing Inks*

■ Camera

- *Illumination Type (white light vs. IR)*
- *OCR Software (regional optimization)*



Improving Plate Readability at the Source



Improving License Plate Readability

- **Improved Contrast Ratio**
 - *Alphanumeric*
 - *Background Graphics*
- **Embedded Identifiers**
 - *State / Country*
 - *Plate Type*
 - *Unique Identifier?*
- **Improved Read Confidence**
 - *Self Check e.g. bar codes*



Visible Light & Infrared (IR) Images



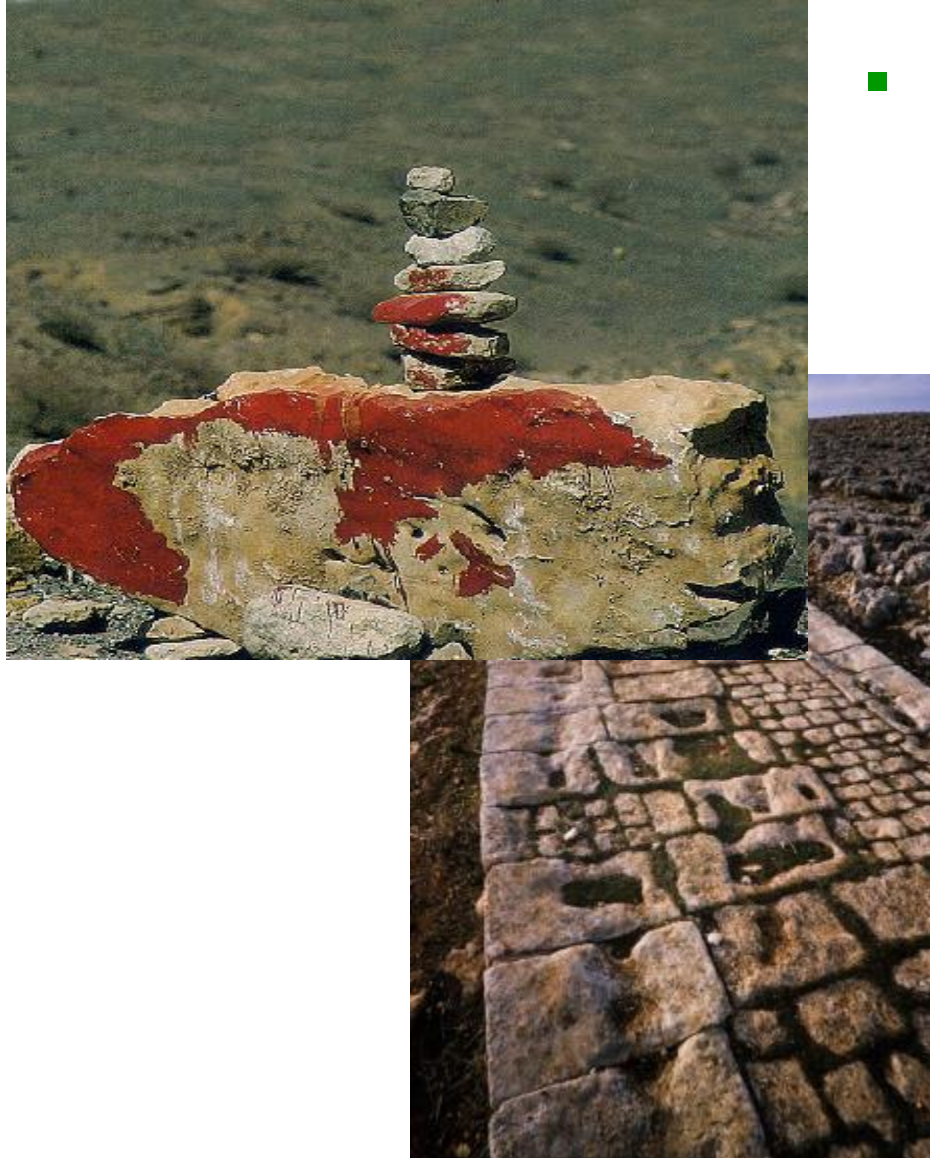
Design Plates for Camera Readability



Quick Historical Review Of Pavement Markings



Back to ancient times...



- The Roman Empire

- *1st road construction: 312 BC*
- *80,000 km road network including 29 highways*
- *The public had the right to use the roads*
- *Maintenance was the responsibility of the inhabitants of the district through which the road ran*
- *Markings could be seen during the day only*

The first practical automobiles ...

- 1886 - German inventors ruled the world
- Australia: Harry A. Tarrant (1897) – the 1st petrol driven car, the “Tarrant”
- The mobilization created new demands
 - *1917 California: June McCarroll run off the road by a truck – birth of the white centerline*
 - *The need for traffic devices incl pavement markings had increased*

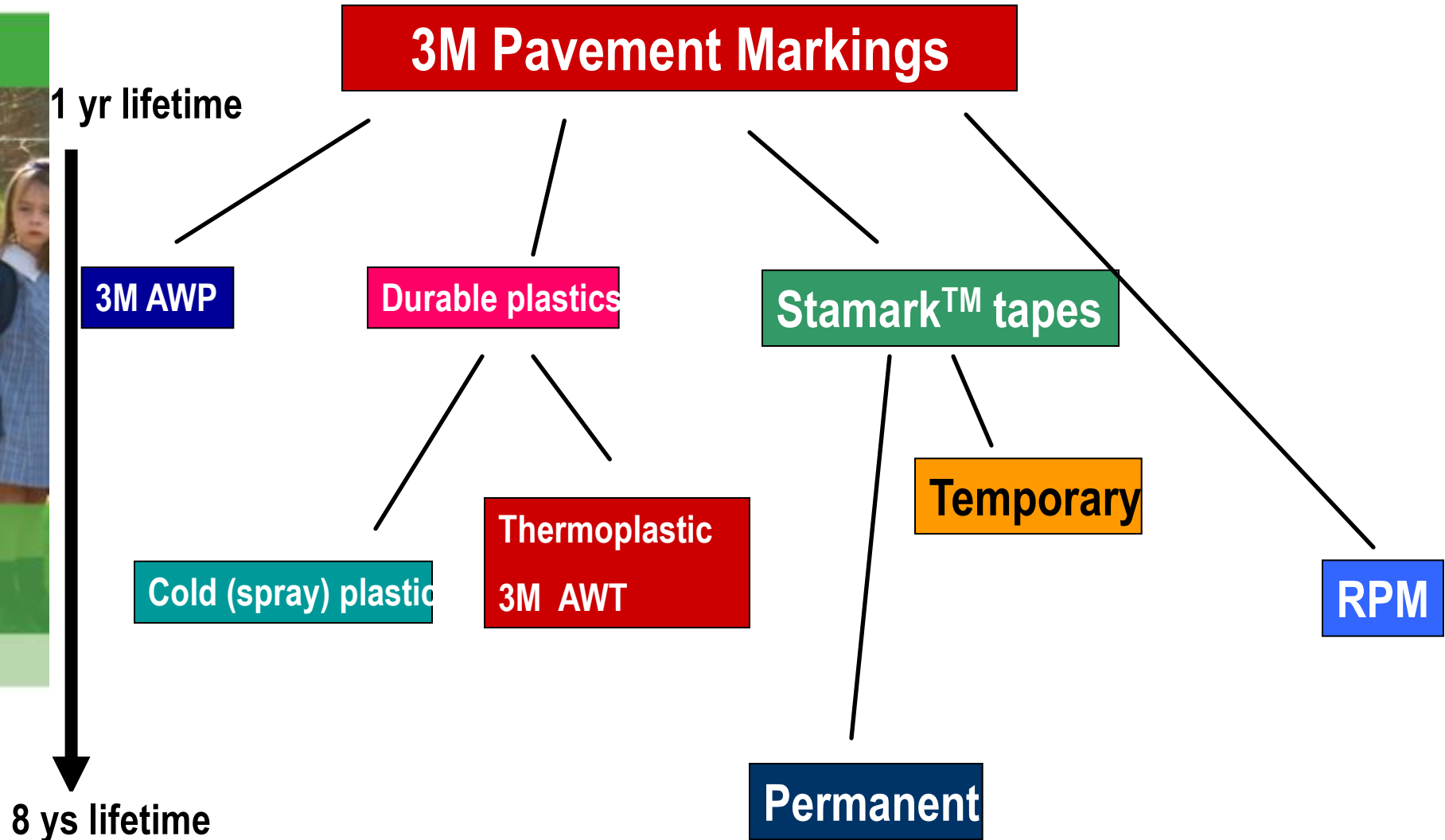


Pavement marking evolution ...

- 1900: White rocks to mark centre lines
- 1911: White paint
- 1934: Potters, glass beads for reflective line markings
- 1938: 3M, 1st reflective tape
- Mid. 1940s: Thermoplastic
- 1964: Stimsonite, prismatic RPMs
- 2000: 3M Wet reflective tapes



3M Pavement Marking Solutions



Stamark Selection Matrix

Tape	Colours	Performance	Durability	Recommended use
A380AW	White, yellow	PERMANENT. Dry and wet reflective.	8 years	High risk areas. Long line applications – edge line, centre line.
A380 IES	White, yellow, black	PERMANENT. Dry and wet recovery performance	6 years	High traffic areas / urban and long line applications. Pedestrian crossings and centre-lines.
A710	White, yellow, black	TEMPORARY. Dry and wet reflective	3-12 months	Any temporary marking



3M Certified Pavement Marker Programme



3M™ Traffic Safety and Security Division
Pavement Marking Solutions



Keeping roads safer for longer



3M Certified
Pavement Marker Programme

