

# Specification for controlling Farm crossing traffic

*Nigel Gunton 11/05<sup>1</sup>*

School of Electrical & Computer Engineering

<b>Grouping</b>	individual
<b>Prerequisites</b>	Knowledge of *nix, emacs, VHDL
<b>Courses</b>	CSE, DSE, EE, any?
<b>Requirements</b>	GNU/Linux or Unix system with Alliance tools, Stamina
<b>Summary</b>	Developing a simple state machine with external components.
<b>Duration</b>	3 - 4 hrs

## Background

The Moldania Highways Authority requires a new system for controlling the crossing point of single track farm roads where they meet a busy dual carriage. The successful design will be used for all similar crossings in Moldania. The design must meet the specification given below.

The Moldanian traffic light sequence is different to that found in the UK. The sequence is as follows.

RED	RED
GREEN	RED
GREEN-FLASH	RED
AMBER	RED
RED	RED
RED	GREEN
RED	GREEN-FLASH
RED	AMBER
RED	RED

The duration of the GREEN-FLASH phase is dependent on the speed limit of the controlled road. Dual carriageways have a speed limit of 796 furlongs per hour, minor roads of 250 furlongs per hour. The GREEN-FLASH phase should have a duration of 1 sec per 50fph.

## Specification

- 1) The dual carriageway will be the priority road.
- 2) The arrival of a cart on the farm road will start a change cycle provided that at least five minutes have elapsed since the last change.
- 3) If cart and > 5minutes\_since last change then commence change.
- 4) The farm road will have the lesser of a maximum cycle of 3 minutes or until the 'crossed button' is pressed.