## Expert Callout System Test Report – Tanner Turba

In the VDM specification for the chemical plant alarm system, there is a function named “QualificationsOK” which takes a set of experts and a qualification as parameters. This function is used to ensure all periods in the plant’s schedule has at least one expert that corresponds to each of the plant’s alarms. This is so there is an expert that can respond to any sounding alarm during any period of operation.

To represent this functionality in my rendition of the alarm system user interface, I chose to highlight any period in the schedule that is lacking an expert with qualifications to match an alarm. More specifically, the row in the schedule table that represents the invalid period will automatically be highlighted in red. This way, users will know which periods are lacking qualified experts and which periods have their qualifications satisfied.

Case 1 – Pass

* Function: Number of Experts
* Parameters
  + Period = “Monday PM”
* Results
  + Expected = 1
  + Actual = 1

Case 2 – Pass

* Function: Number of Experts
* Parameters
  + Period = “Tuesday AM”
* Results
  + Expected = 3
  + Actual = 3

Case 3 – Pass

* Function: Number of Experts
* Parameters
  + Period = “Wednesday AM”
* Results
  + Expected = 0
  + Actual = 0

Case 4 – Pass

* Function: Number of Experts
* Parameters
  + Period = “Tuesday AM”
* Results
  + Expected = 1
  + Actual = 1

Case 5 – Pass

* Function: Number of Experts
* Parameters
  + Period = “Monday AM”
* Results
  + Expected = 3
  + Actual = 3

Case 6 – Pass

* Function: Expert is on Duty
* Parameters
  + Expert = “Expert 1”
  + Period = “Monday AM”
* Results
  + Expected = true
  + Actual = true

Case 7 – Pass

* Function: Expert is on Duty
* Parameters
  + Expert = “Expert 2”
  + Period = “Wednesday AM”
* Results
  + Expected = false
  + Actual = false

Case 8 – Pass

* Function: Expert to Page
* Parameters
  + Alarm = “Power supply missing”
  + Period = “Monday AM”
* Results
  + Expected = Expert 1 || Expert 7
  + Actual = Expert 7

Case 9 – Pass

* Function: Expert to Page
* Parameters
  + Alarm = “Tank overflow”
  + Period = “Wednesday AM”
* Results
  + Expected = “No experts available”
  + Actual = “No experts available”

Case 10 – Pass

* Function: Get Invalid Periods
* Test Steps:
  + Select “Schedules” tab
  + Remove Expert 6 from the schedule on Monday PM
* Results
  + Expected = Monday PM row becomes red to indicate an invalid period.
  + Actual = Monday PM row became red, which means there are one or more alarms that don’t have a corresponding expert to match its qualification.