

# Function: ReadCell()

## Name

ReadCell – Read Cell

## Syntax

```
ReadCell(string Name, int Index)
```

## Description

ReadCell returns the value of the cell called. Index specifies the array element to access. Because most cells arrays are one (1) element, a 0 (zero) value indicates the first element.

ReadCell can be used within an expression and in conjunction with variables as needed (see examples below).

Valid cells will be present within the DAQ collect file: NadsMiniSim\_x.x\data\NadsMiniSimCollect.general.txt

**NOTE: ReadCell can only read a specified list of cells.** The NADS software development team may add new cells as needed.

## Cells available during ISAT rehearsal:

**NOTE:** Any valid cell (see the See Also section for cell reference documentation) can be used in a ReadCell function call. The following are cells available during ISAT rehearsal.

### Data

- `LogStreams` : Array of 5 floats. Logstreams are a set of values the scenario author can write to through “write to logstream” actions.
- `DynObj_Vel`: Array of 20 floats. The speed of a given dynamic object. Dynamic Objects are sorted in terms of distance to driver.

### Driver Related

- `OvHeadwayToLeadVeh`: Single Value. The distance in feet to the first vehicle in front of the participant. -1 if no vehicle can be found.
- `OvLaneDev`: Single Value. The participant’s lane deviation in feet.
- `OvTtcToLeadVeh`: Single Value. The time to collision to the first vehicle ahead of the participant.
- `OvVel`: Single Value. The participant’s current speed in miles per hour
- `OvVelLocal` : Single Value. The participant’s current speed in miles per hour, using the value local to scenario control

### Simulator Cab Hardware

- `AccelPedalPos` : Single Value. The current position of the accelerator pedal
- `BrakePedalForce`: Single Value. The current force on the brake pedal in pounds
- `CruiseControl`: Single Value. The current cruise control position. (values are cab/platform specific)

- **Horn:** Single Value. The state of the horn (values are cab/platform specific)
- **SteeringWheelAngle:** Single Value. The current rotation of the steering wheel
- **TurnSignal:** Single Value. The current position of the turn signal (values are cab/platform specific)

**Note:** Additional cell names can be found within the MiniSim Data Acquisition Cell Definitions document provided with the MiniSim. A sample of these cells is shown in the Example > Expressions section below.

## ReadCell() Return Value

Returns the value of the specified cell.

## Example

```
ReadCell('LogStreams',5) > 3
```

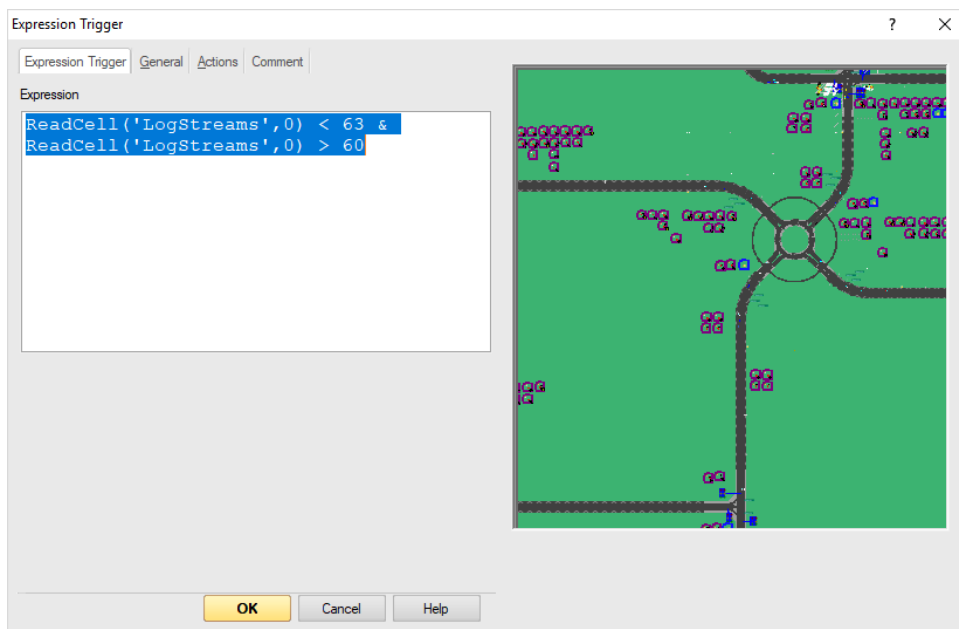
### Expressions

Due to the graphical nature of the ISAT user interface, these examples show extracts from scenarios in text form. When used in ISAT the scenario author would not enclose the expression string in double quotes as shown in the expression trigger screenshots.

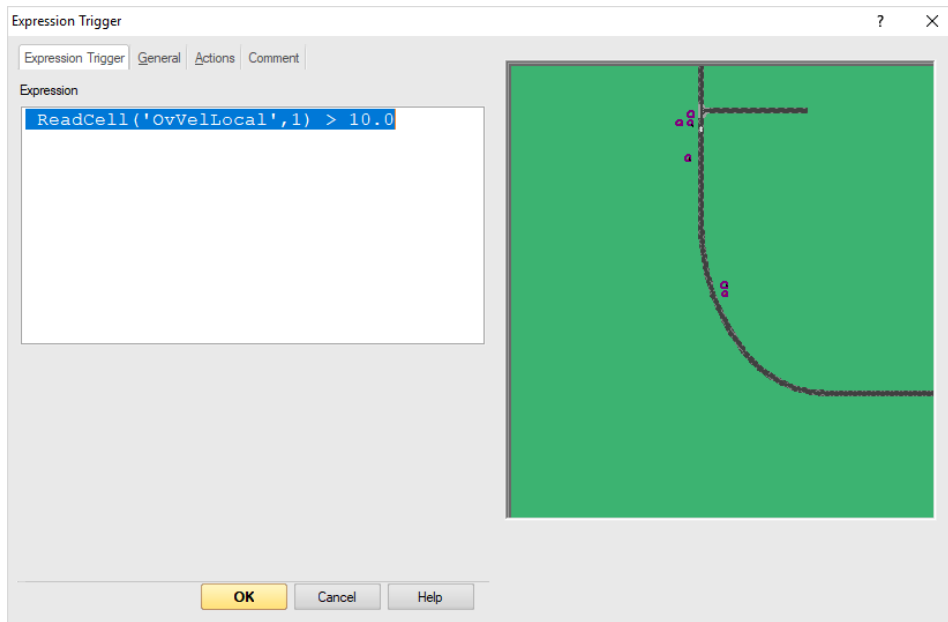
**NOTE:** Variables are used for examples. Valid expressions require the scenario author to make/use these variables and ensure they contain valid data.

**NOTE:** Some of the examples also use custom cells.

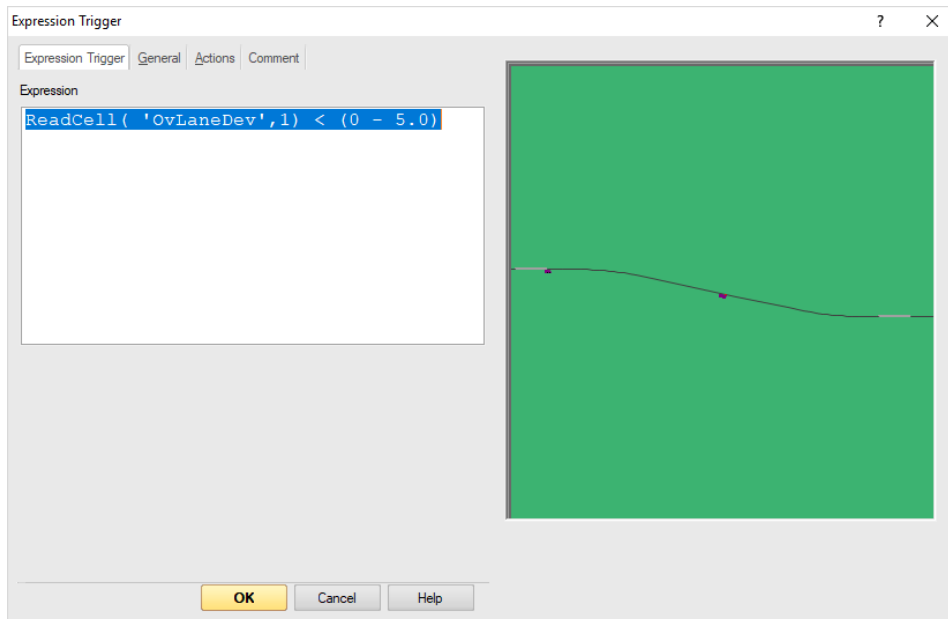
```
Expression "ReadCell('LogStreams',0) < 63 & ReadCell('LogStreams',0) > 60"
```



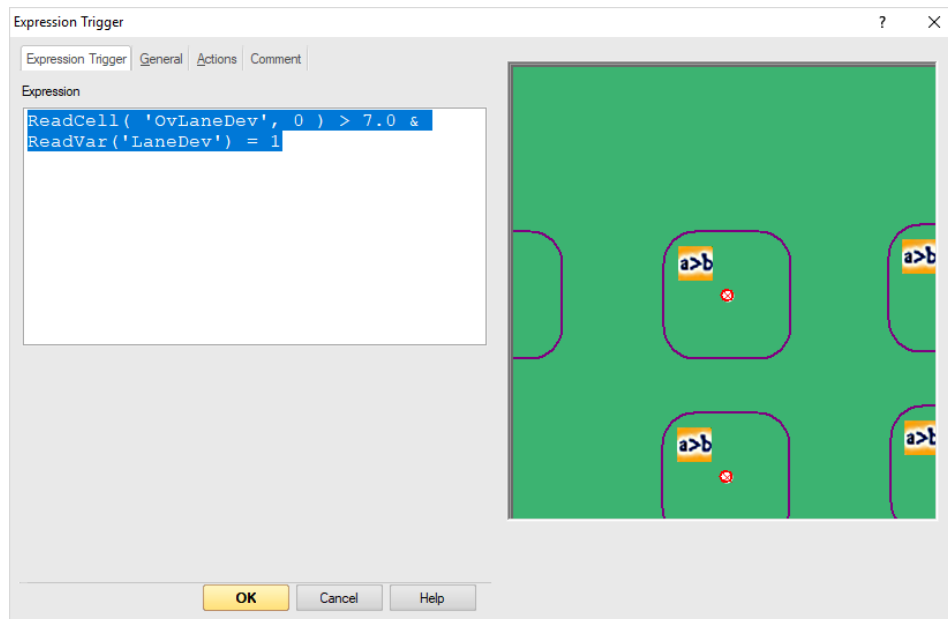
Expression "ReadCell( 'OvVelLocal', 0 ) > 10.0"



Expression "ReadCell( 'OvLaneDev',1) < (0 - 5.0)"



Expression "ReadCell( 'OvLaneDev', 0 ) > 7.0 & ReadVar('LaneDev') = 1"



Expression "ReadCell('OvVelLocal',1) < 60 & DriverStarted > 0"

Expression "ReadVar('ActivatingCruise') = 1.0 & ReadCell('VDS\_Cruise\_State', 0) = 4 & ReadVar('DriveOver') = 0"

Expression "ReadCell('AUX\_SteeringWheelButtons',0) < 0"

Expression "ReadCell('VDS\_TRANS\_Eng\_Rnng',0) > 0"

Expression "ReadVar('TrialNumber') = 7.0 & ReadVar('FirstButtonPress') = 1.0 & (ReadCell('Auxiliary\_Buttons', 0) > 0 | ReadCell('Auxiliary\_Buttons',1) > 0)"

Expression "ReadCell('SCC\_Collision\_Det\_Ob\_SolId',1) = 15201"

Expression "ReadCell('CFS\_Auto\_Transmission\_Mode',1) > 3 & ReadCell('BrakePedalForce',1) < 1"

Expression "ReadCell('AUX1\_FcwWarningTimedHeadway',1)=1 "

Expression "ReadCell ('OvTtcToLeadVeh',0)>0 & ReadCell ('OvTtcToLeadVeh',0)<100"

Expression "(ReadCell ('SCC\_Follow\_Info', 0) =< (0-1)) & (GetObjDistPow2('LeadCar') < 250000)"

## See Also:

WriteCell()

ReadVar()

Data Acquisition Cell Definitions – for cell definitions and descriptions

NadsMiniSimCollect.general.txt – for cell definitions and descriptions that are collected into the DAQ file during simulation.