

Appendix A

Dynamic Data Exchange (DDE) Support

Long Doan
Doan and Associates
Falls Church, VA

Keith Alcock
Artificial Intelligence Laboratory
University of Arizona
Tucson, AZ

CrimeStat supports Dynamic Data Exchange (DDE). This allows the program to be linked to another program, which can call up *CrimeStat* as a routine. The following are the programming codes used to support DDE commands.

CrimeStat's DDE Topics That Support the DDE "poke" Command

Topic	Item	Data format
Primary File	File	RemoveAll
		AddTextFile <name> <columns> <separator> <header rows>
		AddDbfFile <name>
		AddShpFile <name>
	X	<file name> <column name>
	Y	<file name> <column name>
	Weight	<file name> <column name>
	Intensity	<file name> <column name>
	Direction	<file name> <column name>
	Coordinate	<coordinate> <unit> Valid coordinates: Longitude, latitude Projected Direction Valid units: Decimal degrees Feet Meters
Secondary File	File	See <u>Primary File</u>
	X	See <u>Primary File</u>
	Y	See <u>Primary File</u>
	Weight	See <u>Primary File</u>
	Intensity	See <u>Primary File</u>
	Direction	See <u>Primary File</u>

Reference File	Source	<source> Valid sources: From File Generated
	File	See <u>Primary File</u>
	X	See <u>Primary File</u>
	Y	See <u>Primary File</u>
	True Grid	<number of columns> a value of zero (0) will uncheck the check box.
	Bound	<lower-left x> <lower-left y> <upper-right x> <upper-right y>
	Cell specification	<source> <value> Valid sources: By cell-spacing By number of columns
Measurement Parameters	Measurement Type	<type> Valid types: Direct Indirect
	Area	<area> <area unit> Valid units: See <u>Dialog</u>
	Length	<length> <length unit> Valid units: See <u>Dialog</u>

CrimeStat's DDE Topics That Support the DDE "request" Command

Topic	Item	Return value
System	SysItems	Name of the supported items of the "system" topic.
	ReturnMessage	Detailed information (if any) of the last message.
	Status	Server status, either "Ready" or "Busy".
	Formats	Supported data formats.
	Help	Detailed help on CrimeStat's DDE support.
	TopicItemList	Name of the supported items of the current topic.
	Topics	List of all topics.

CrimeStat's DDE Topics That Support the DDE "execute" Command

Topic	Command	Description
System	Quit	Close CrimeStat.
System	Compute	Perform the action triggered by the compute button.
System	Load <filename>	Loads parameters stored in the file named <filename> as if the Load parameters button on the Options tab had been pressed.
Primary File	Select	Select the <u>Primary file</u> tab.
Secondary File	Select	Select the <u>Secondary file</u> tab.
Reference File	Select	Select the <u>Reference file</u> tab.
Measurement Parameters	Select	Select the <u>Measurement parameters</u> tab.
Spatial Distribution	Select	Select the <u>Spatial distribution</u> tab.
Distance Analysis I	Select	Select the <u>Distance analysis I</u> tab.
Distance Analysis II	Select	Select the <u>Distance analysis II</u> tab.
'Hot spot' Analysis I	Select	Select the <u>'Hot spot' analysis I</u> tab.
'Hot spot' Analysis II	Select	Select the <u>'Hot spot' analysis II</u> tab.
Interpolation	Select	Select the <u>Interpolation</u> tab.
Journey-to-Crime	Select	Select the <u>Journey-to-Crime</u> tab
Space-time analysis	Select	Select the <u>Space-time analysis</u> tab.
Options	Select	Select the <u>Options</u> tab.

Example: Controlling CrimeStat from within Visual basic

```

Public Function OpenCrimeStat(topic As String) As Variant
    On Error Resume Next
    Dim channel, I
    Dim file As String
    file = "CrimeStat.exe"
    channel = DDEInitiate("CrimeStat", topic)
    If Err Then
        Err = 0
        I = Shell(file, 1)
        If Err Then
            Return
        End If
        channel = DDEInitiate("CrimeStat", topic)
    End If
    OpenCrimeStat = channel
End Function

```

```

Public Sub TestCrimeStatDde(foo As String)
    On Error Resume Next
    Dim file As String
    Dim channel

    file = "SampleData.dbf"
    channel = OpenCrimeStat("Primary File")
    DDEPoke channel, "Coordinate", "Projected| Feet"
    DDEPoke channel, "File", "RemoveAll"
    DDEPoke channel, "File", "AddDbfFile| " & file
    DDEPoke channel, "X", file & "| LON"
    DDEPoke channel, "Y", file & "| LAT"
    DDEPoke channel, "Coordinate", "Longitude, latitude| Decimal degrees"
    DDETerminate channel

    file = "Grid.dbf"
    channel = OpenCrimeStat("Reference File")
    DDEPoke channel, "Source", "From File"
    DDEPoke channel, "True Grid", "0"
    DDEPoke channel, "File", "RemoveAll"
    DDEPoke channel, "File", "AddDbfFile| " & file
    DDEPoke channel, "X", file & "| LON"
    DDEPoke channel, "Y", file & "| LAT"
    DDEPoke channel, "True Grid", "108"
    DDEPoke channel, "Source", "Generated"
    DDEPoke channel, "Bound", "-78.5| 22.4| -75.3| 24.2"
    DDEPoke channel, "Cell Specification", "By cell-spacing| 0.5"
    DDEPoke channel, "Cell Specification", "By number of columns| 20"
    DDETerminate channel

    channel = OpenCrimeStat("Measurement Parameters")
    DDEPoke channel, "Measurement Type", "Direct"
    DDEPoke channel, "Measurement Type", "Indirect"
    DDEPoke channel, "Area", "734.12| Square meters"
    DDEPoke channel, "Length", "1734.12| meters"
    DDETerminate channel

    channel = OpenCrimeStat("Interpolation")
    DDEExecute channel, "select"
    DDETerminate channel
End Sub

Private Sub CrimeStatQuit_Click()
    On Error Resume Next
    Dim channel
    channel = OpenCrimeStat("System")

```

```
DDEExecute channel, "quit"  
DDETerminate channel  
End Sub  
Private Sub TestCrimeStat_Click()  
    TestCrimeStatDde "bar"  
End Sub
```