

# THE CHANGE YOU SHAPE



# Introduction to Workflows

---

Frank Moore, Senior Support Consultant

6, November, 2018



# Introduction

## 1. Frank Moore

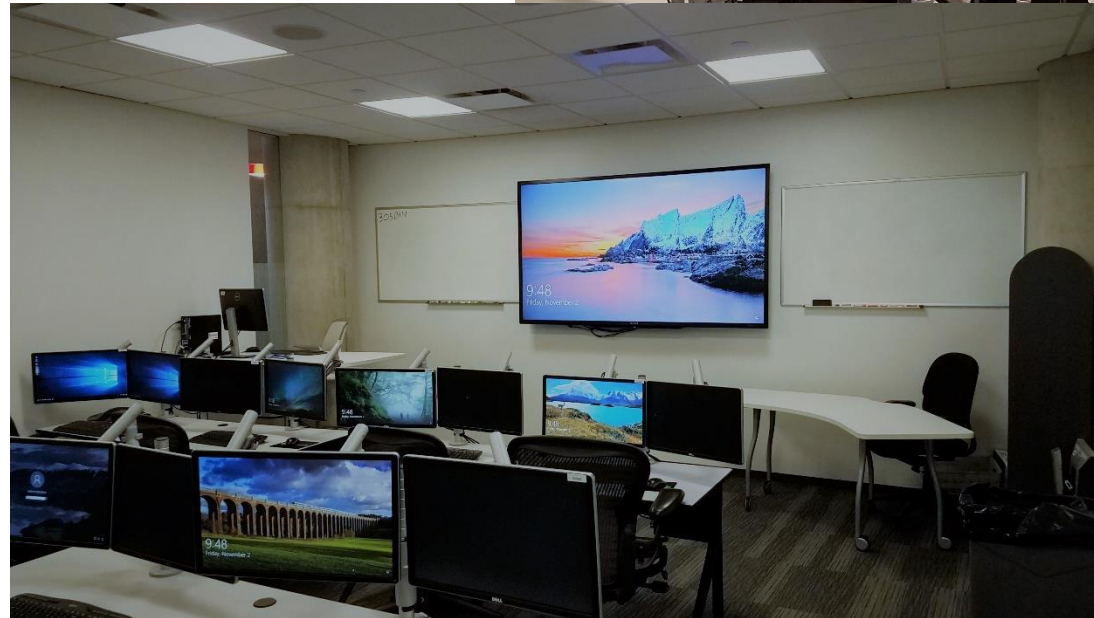
- a) Over 26 years with Intergraph/Hexagon Safety and Infrastructure
- b) Worked in many groups wearing many different hats
  - i. I/RAS B, E, MicroStation, Anatech Scanners
  - ii. MGE Suite, Dynamo Suite, GeoMedia, Federal Systems (Mapping)
  - iii. InService Suite – CAD
  - iv. Public Safety - CAD
- c) Hats
  - i. Support
  - ii. Certification
  - iii. Design Teams
  - iv. Tiger Teams
  - v. Development
  - vi. Implementation
  - vii. Product Management
  - viii. Trainer

## 2. Who are you – around the room

# Huntsville Training Facility

## 1. Training room B

- a) Quite Comfortable room
- b) Start of the Art Hardware
- c) Latest CAD Software
- d) 28 classes on the schedule for 2019
- e) Lake
- f) Barista
- g) Café



# 2019 Huntsville Training Schedule

Subject to change

Hexagon CAD Training Courses at Hexagon Headquarters (Madison, AL)														
Q1 2019														
Course Title	Duration	Dec 31 - Jan 4	Jan 7 - Jan 11	Jan 14 - Jan 18	Jan 21 - Jan 25	Jan 28 - Feb 1	Feb 4 - Feb 8	Feb 11 - Feb 15	Feb 18 - Feb 22	Feb 25 - Mar 1	Mar 4 - Mar 8	Mar 11 - Mar 15	Mar 18 - Mar 22	Mar 25 - Mar 29
CAD System Administration - Introduction	3 days					Tue - Thu								
CAD System Administration - Core	4 days						Mon - Thu				Mon - Thu			
CAD System Administration - Advance	4 days											Mon - Thu		
CAD Essentials	4 days													
Mobile System Administration	4 days							Mon - Thu						
Web RMS	4 days									Mon - Thu				
CAD Map Administration	4 days									Mon - Thu				
		Holiday	Holiday		Holiday									
Q2 2019														
Course Title	Duration	Apr 1 - Apr 5	Apr 8 - Apr 12	Apr 15 - Apr 19	Apr 22 - Apr 26	Apr 29 - Mar 3	May 6 - May 10	May 13 - May 17	May 20 - May 24	May 27 - May 31	Jun 3 - Jun 7	Jun 10 - Jun 14	Jun 17 - Jun 21	Jun 24 - Jun 28
CAD System Administration - Introduction	3 days	Tue - Thu												
CAD System Administration - Core	4 days		Mon - Thu					Mon - Thu						
CAD System Administration - Advance	4 days								Mon - Thu					
CAD Essentials	4 days													
Mobile System Administration	4 days			Mon - Thu										
Web RMS	4 days						Mon - Thu							
CAD Map Administration	4 days					Mon - Thu								
										Holiday		HxGN Live		
Q3 2019														
Course Title	Duration	Jul 1 - Jul 5	Jul 8 - Jul 12	Jul 15 - Jul 19	Jul 22 - Jul 26	Jul 29 - Aug 2	Aug 5 - Aug 9	Aug 12 - Aug 16	Aug 19 - Aug 23	Aug 26 - Aug 30	Sep 2 - Sep 6	Sep 9 - Sep 13	Sep 16 - Sep 20	Sep 23 - Sep 27
CAD System Administration - Introduction	3 days		Tue - Thu											
CAD System Administration - Core	4 days			Mon - Thu					Mon - Thu					
CAD System Administration - Advance	4 days									Mon - Thu				
CAD Essentials	4 days													
Mobile System Administration	4 days				Mon - Thu									
Web RMS	4 days							Mon - Thu						
CAD Map Administration	4 days						Mon - Thu							
		Holiday									Holiday			
Q4 2019														
Course Title	Duration	Sep 30 - Oct 4	Oct 7 - Oct 11	Oct 14 - Oct 18	Oct 21 - Oct 25	Oct 28 - Nov 1	Nov 4 - Nov 8	Nov 11 - Nov 15	Nov 18 - Nov 22	Nov 25 - Nov 29	Dec 2 - Dec 6	Dec 9 - Dec 13	Dec 16 - Dec 20	Dec 23 - Dec 27
CAD System Administration - Introduction	3 days		Tue - Thu											
CAD System Administration - Core	4 days			Mon - Thu				Mon - Thu						
CAD System Administration - Advance	4 days								Mon - Thu					
CAD Essentials	4 days													
Mobile System Administration	4 days				Mon - Thu									
Web RMS	4 days						Mon - Thu							
CAD Map Administration	4 days											Mon - Thu		
										Holiday				Holiday

# CAD Workflows

Workflows extend the CAD functionality with calculations and decisions with an outcome

## 1. Client workflows

- a) Client workflows are run from within dispatcher
- b) Client workflows are run like any command launched from the command line or through the GUI interface but are triggered by the dispatcher.
- c) .XAML format

## 2. (IFCADDirect) Server Workflows

- a) Server side workflows require services to be running on the server through ISM.
- b) Workflows are triggered from actions on the CAD like a cleared unit.
- c) .XIFML format

# CAD Client Workflows

## 1. Client workflows

- a) Based on Microsoft workflows
  - i. You can bring up CAD workflows in a Microsoft workflow editor
- b) Workflows reside in the CMAP\Workflow directory.
- c) Each client that wants to run the workflow must have the workflow locally
  - i. Configuration files
- d) Workflows can be run from command line.
  - i. Workflow -WN MyWorkflow -arguments <argument> <argument>
- e) Workflows can be incorporated into the MonitorCmdKey.
- f) Workflows are read from the disk when executed
  - i. Don't have to close dispatcher or refresh cad
- g) Workflows can be run inside of workflows
- h) IFCADDirect workflow and client workflow are not compatible with each other
- i) The CAD workflow editor is in CADDDBM

# Workflow Toolbox

1. Basic
2. Flowchart
3. Collection
4. File Access
5. Cad UI
6. Cad Unit / Event
7. Cad Commands
8. Cad Database
9. Send Xml Packet
10. Map Tools
11. Referenced Workflows

SEND MESSAGE WF1

```

graph TD
    Start((Start)) --> TermsSpecified[Terms Specified  
Double-click to view]
    TermsSpecified --> AssignMessage[Assign Message]
    AssignMessage --> End(( ))
    
```

Name	Variable type	Scope	Default
Terms	String	SEND MESSAGE	Enter a VB expression
Message	String	SEND MESSAGE	Enter a VB expression

Create Variable



# Workflow Toolbox

1. Variables are used inside a workflow
2. Arguments are brought into the workflow from the command line
3. Imports allow you to incorporate other components and variable types that are not in the workflow by default.

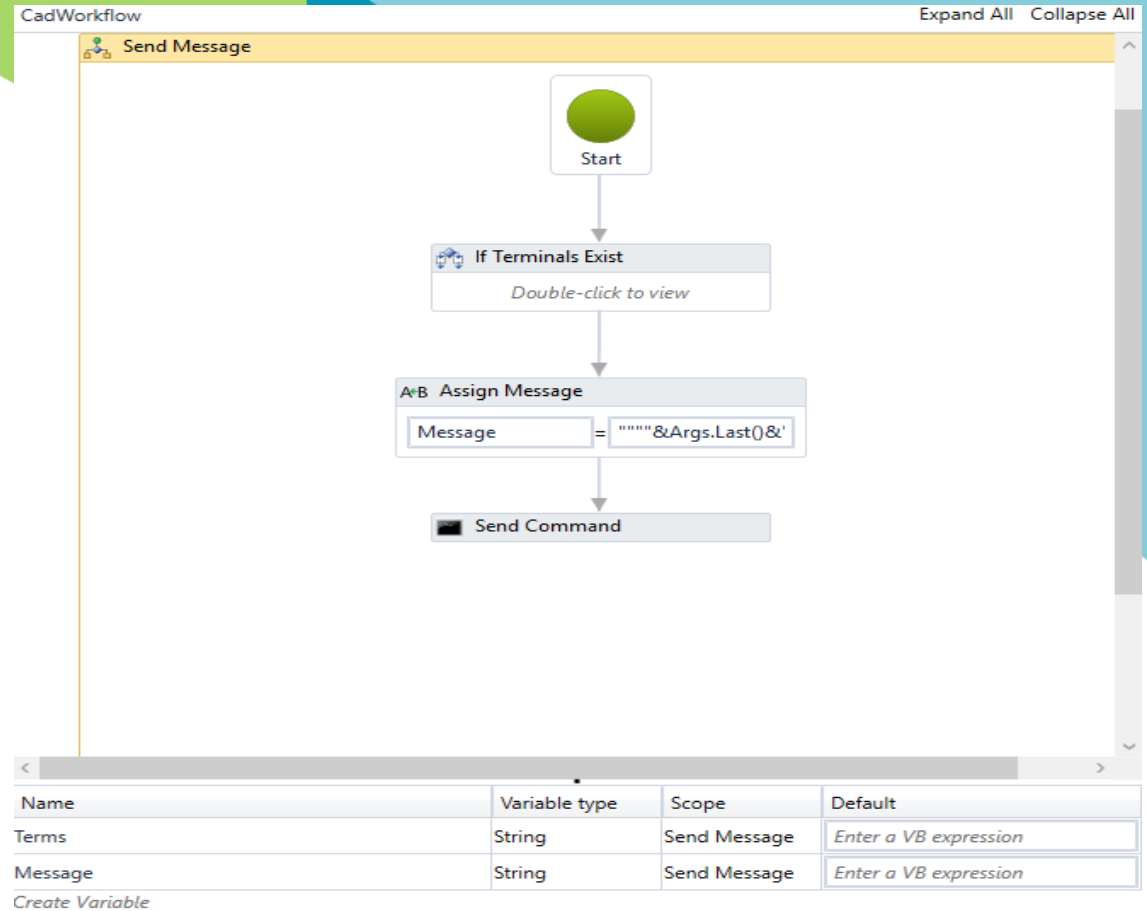
The screenshot displays the 'SendMessage.xml - CAD Workflow Editor' interface. On the left is a 'Workflow Toolbox' with categories: Basic (Sequence, If, ForEach<>, While, Assign, Delay, TerminateWorkflow), Flowchart (Flowchart, FlowDecision, FlowSwitch<>), Collection, File Access, Cad UI, Cad Unit / Event, Cad Commands, Cad Database, Send Xml Packet, Map Tools, and Referenced Workflows. The main workspace shows a workflow diagram for 'SEND MESSAGE WF1' starting with a 'Start' node, followed by 'Terms Specified' (with a 'Double-click to view' tooltip), and then 'Assign Message'. The 'Assign Message' node has a 'Message' field containing '&Args.Last()&'. Below the diagram is a table with the following data:

Name	Variable type	Scope	Default
Terms	String	SEND MESSAGE \	Enter a VB expression
Message	String	SEND MESSAGE \	Enter a VB expression

At the bottom of the table is a 'Create Variable' button. The right sidebar shows a 'Misc' panel with properties: CommandLine ('SEND ...'), DisplayName ('Send Msg C'), and Wait ('Enter a ...').

# Creating Workflows

1. Keep it simple
2. Write out what you want to accomplish
3. Write an outline for your workflow
4. See if there is an example workflow that can be modified for your needs
5. For beginners, number your steps for easy debugging
6. Turn on “All” logging in CADDDBM for Workflows
  - a) CAD>Parameter Table>LogLevel
7. Know where the log file is
  - a) CAD.Addin.log



# Running Workflows

## 1. CADDDBM

- a) EW – WN SendMessage –Args <terminal> <terminal> <message>
- b) MonitorCmdKey
  - i. Position = leave blank
  - ii. Configuration Name = Name of the configuration that will use this keyin. In this case, enter **CAD**
  - iii. Monitor = **WorkflowAddIn**
  - iv. Cmdkey = **EXECUTEWORKFLOW**
  - v. Cmdclass = **50 (Access Level)**
  - vi. Params = -
  - vii. Keyins = **Send –Args +WN SendMessage**
- c) **Send <terminal> <terminal> <terminal> <message>**

## Demonstration

1. Lets look at a couple of workflows and how they are built.
2. Send Message
3. Logon Unit with associated user from the persl table.



**HxGN** | LIVE | LAS VEGAS, NV |  
11-14 JUNE 2019 |

# Thank You