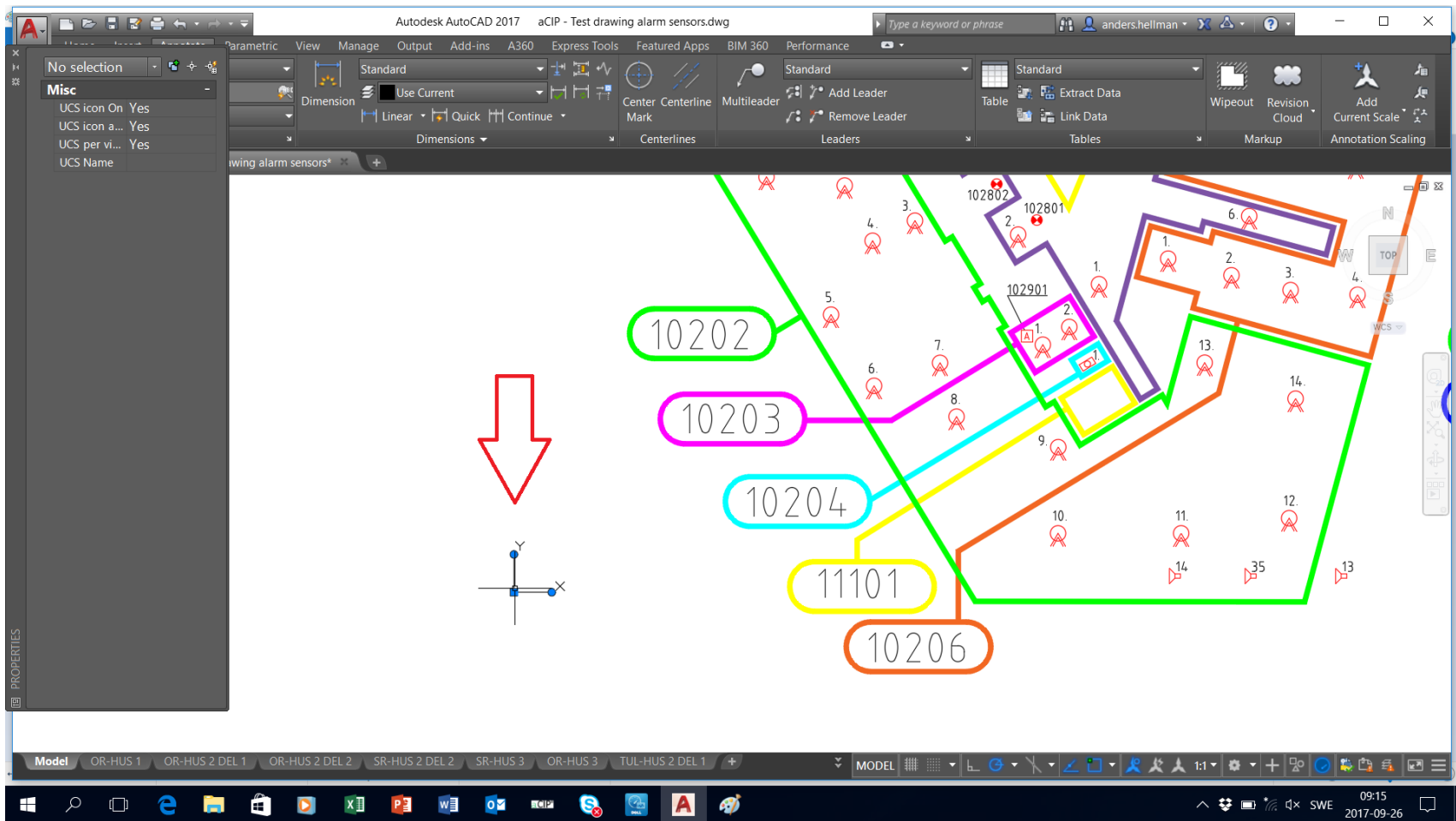# aCIP® - Smart information management
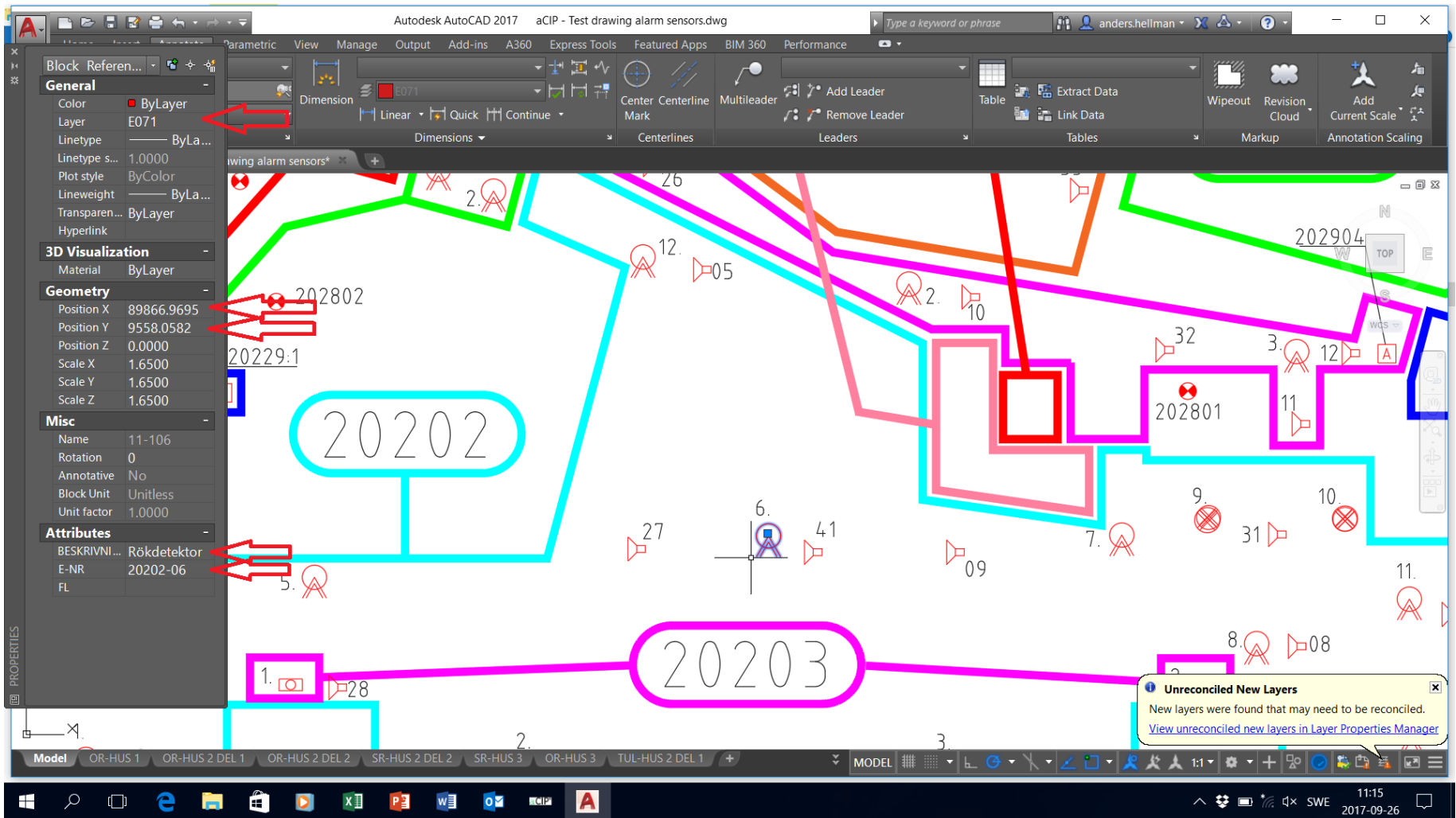
Fetch sensors from AutoCad
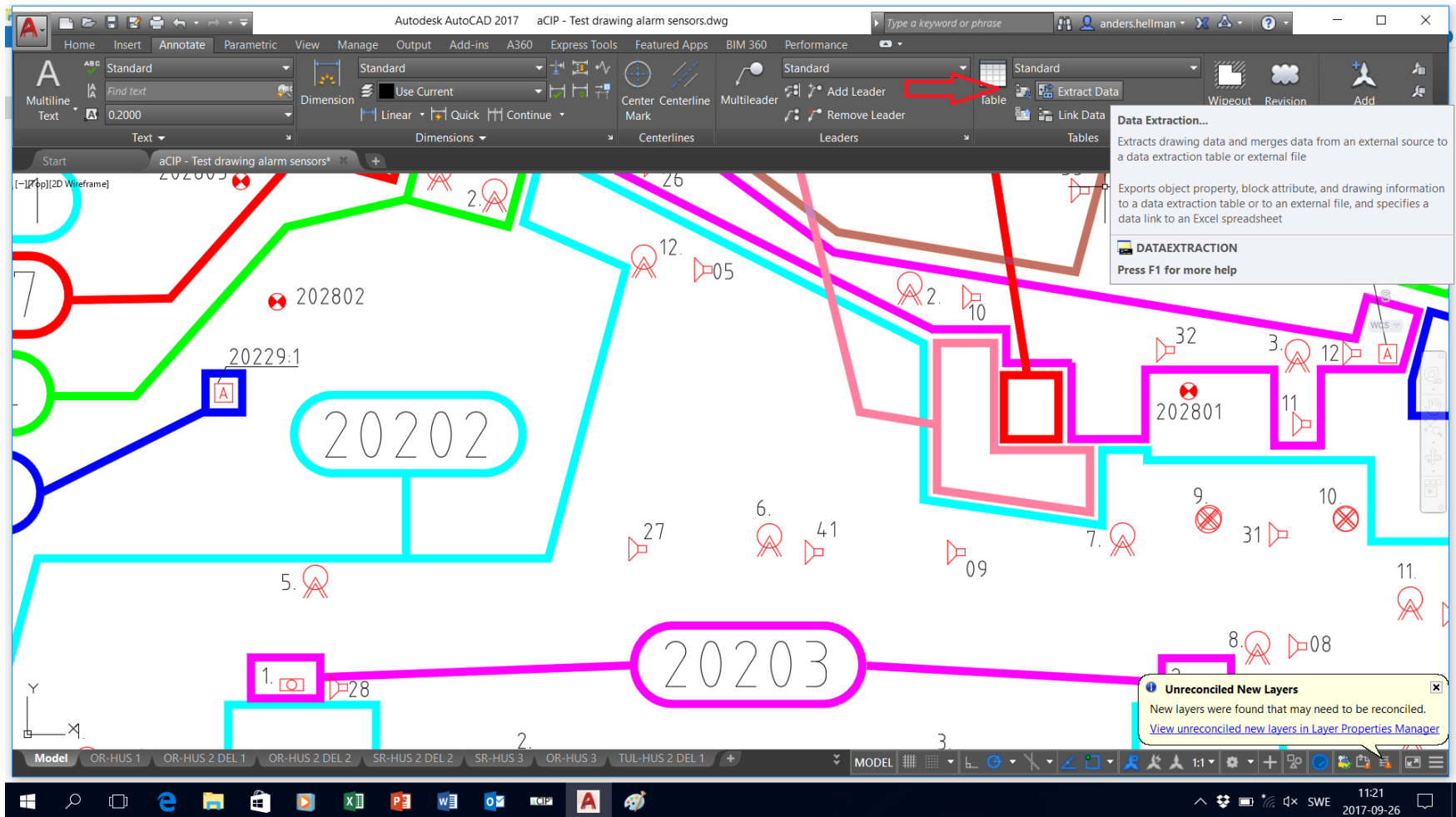
- Find origo
  - Get the longitude and latitude for origo from Google Earth or similar
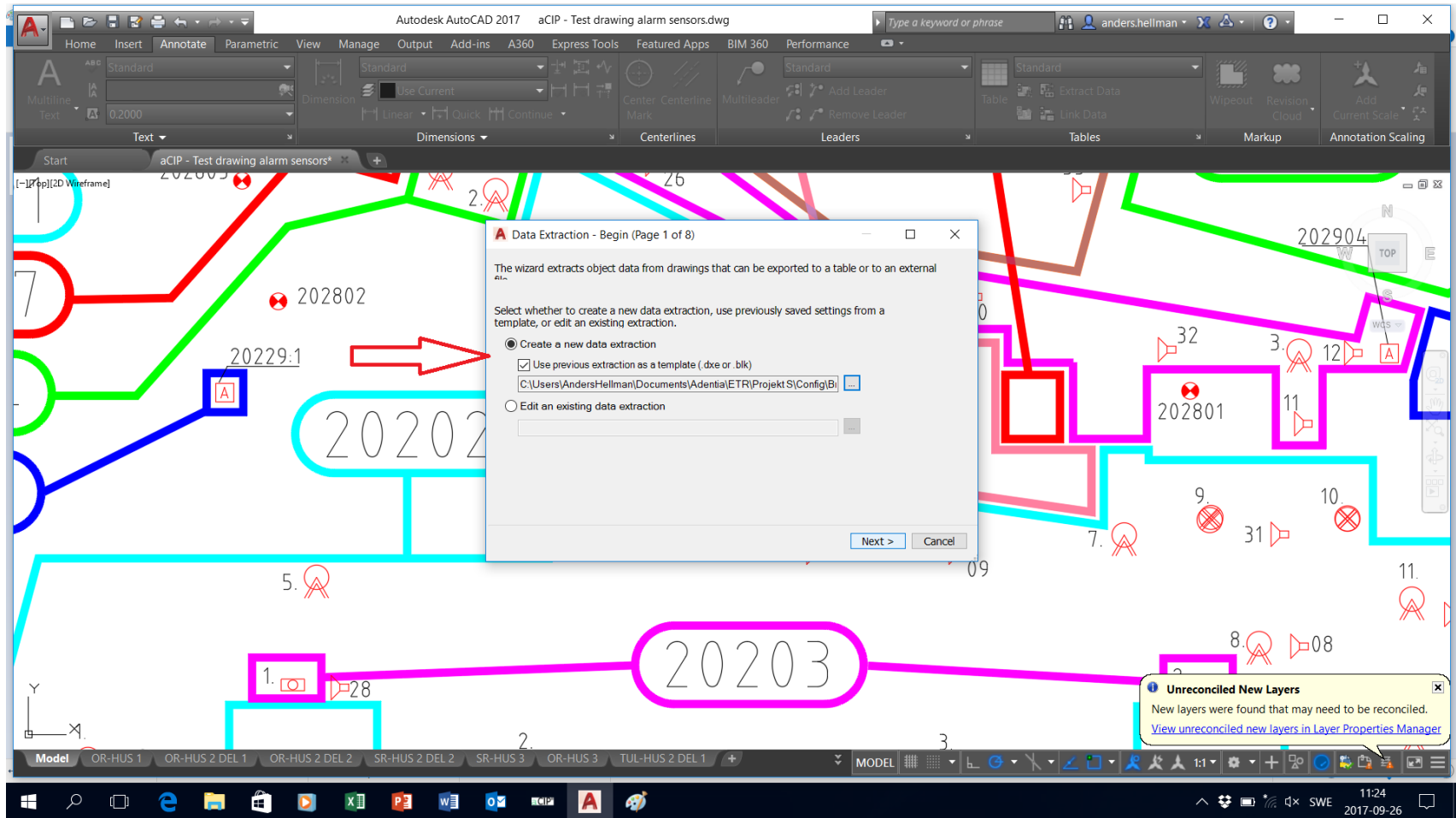
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- Find layer and attributes of interest for the objects of interest

- Select "Extract data"

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- Create a new data extraction template
  - Can use another extraction as template
  - Or create a brand new one where you have to set which layers, object types and attributes to export

- Make sure to select only the drawing of interest
  - That drawing must be open in AutoCad

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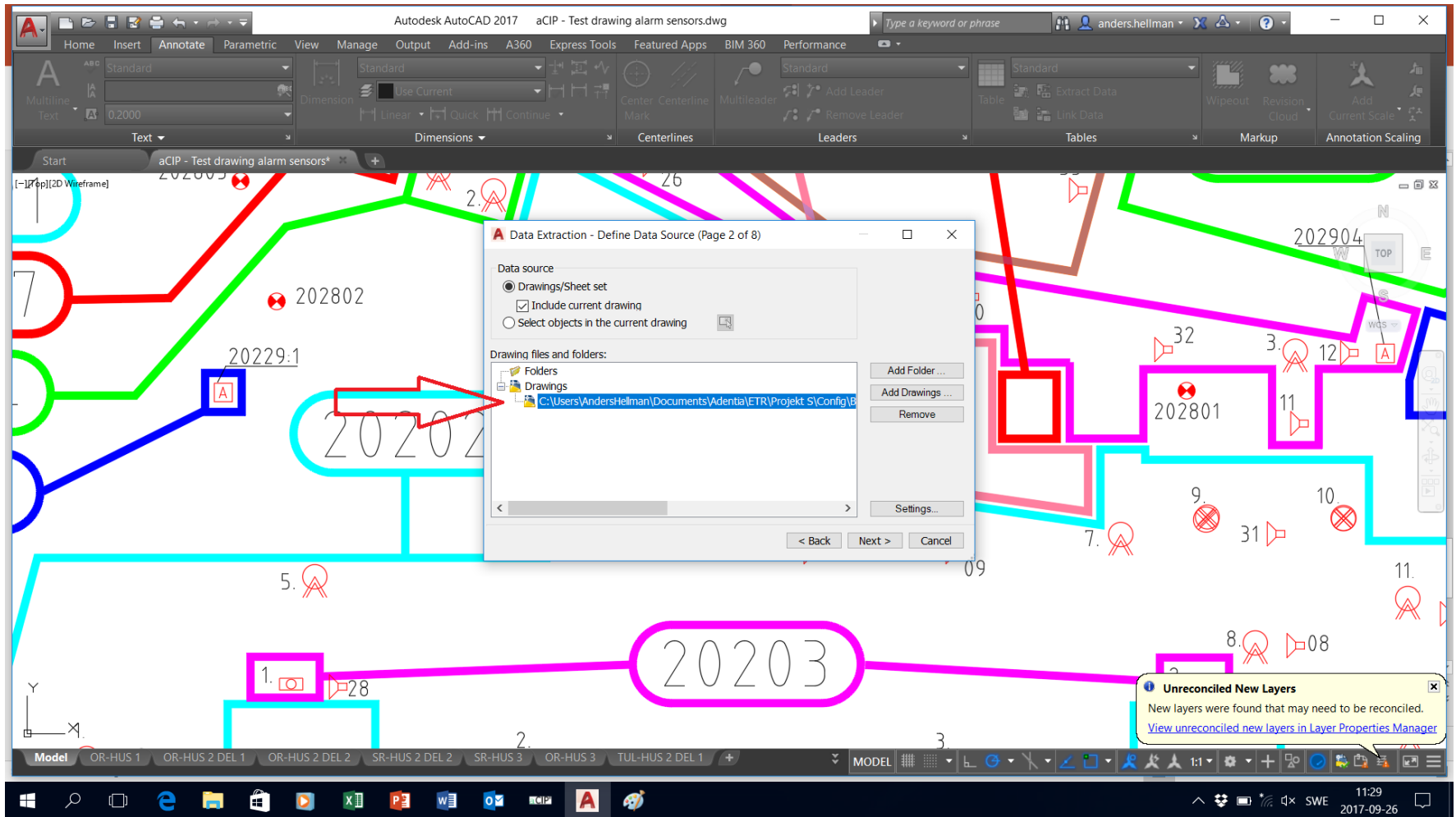
- Select object types of interest
  - Normally a bit trial and error is required. But these setting are almost always the same for all drawing from a specific site and even from a specific integrator.
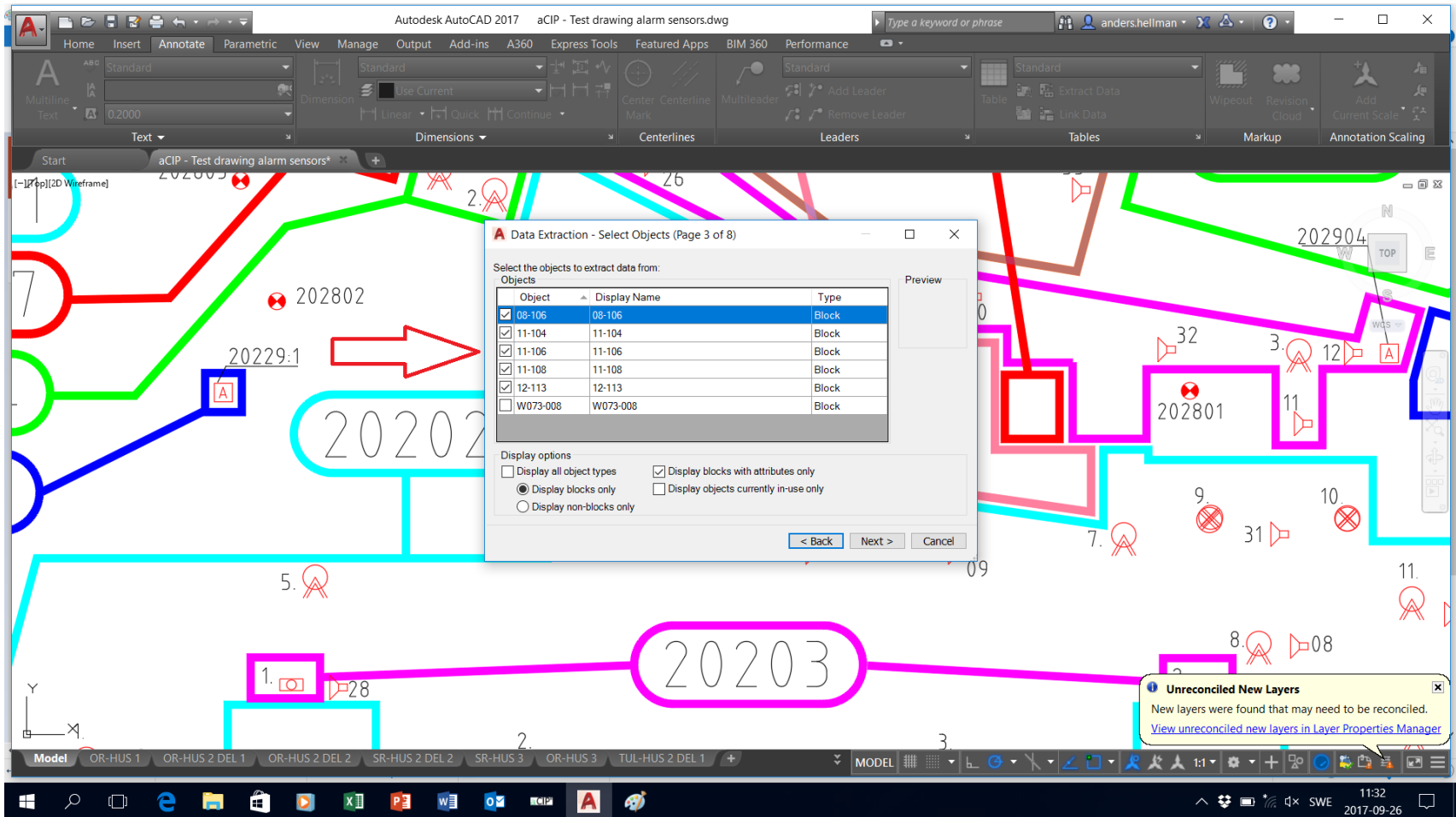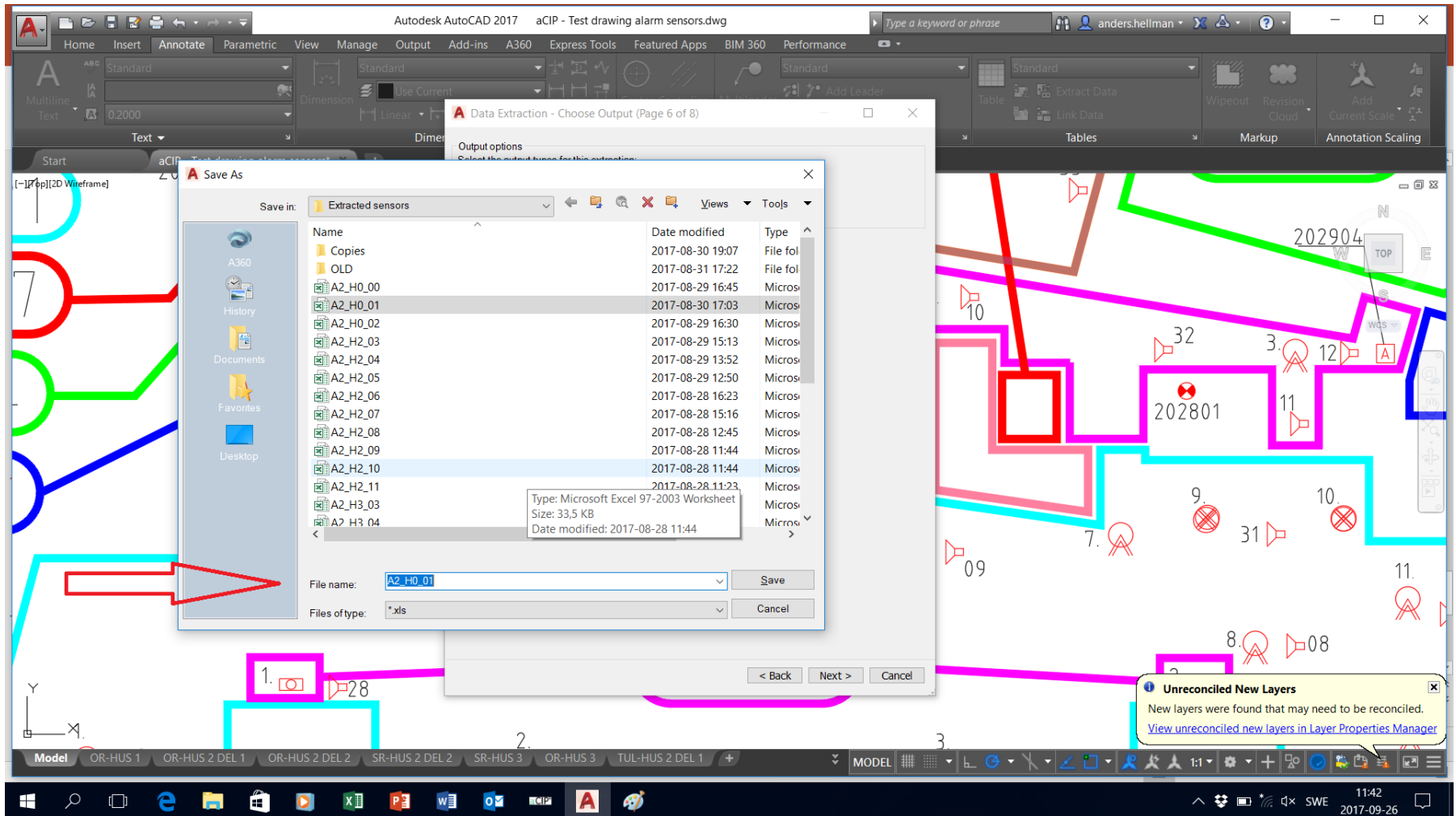
- Select attributes of interest.

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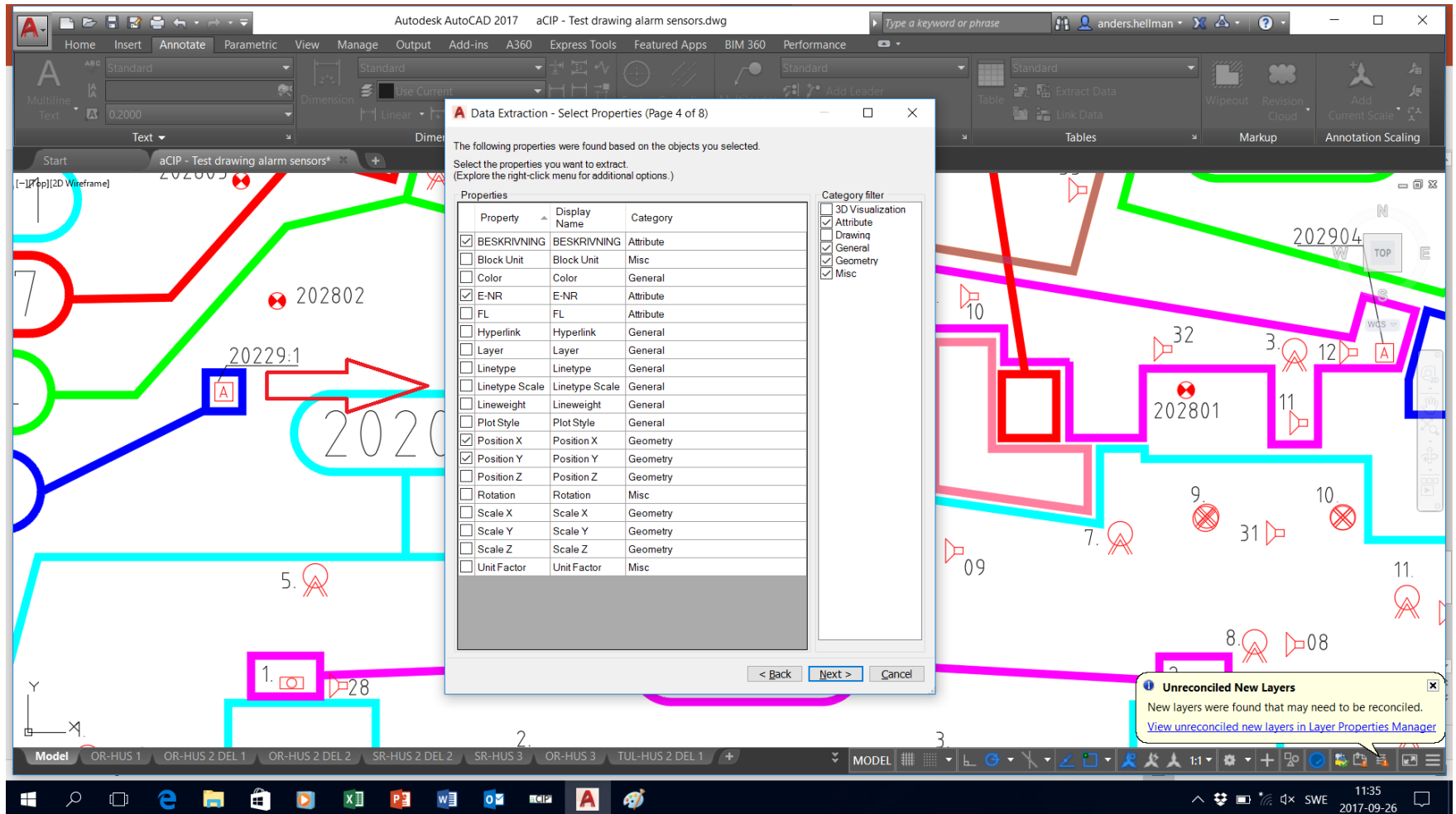
- Enjoy a preview of elements to export
  - If you like you can refine your filtering and sorting here. But it's easier to do it afterwards on Excel.

- Decide name and location for export file

- Run the extraction
  - Can be repeated easily based on the new template you just created to update from changes done in the drawing
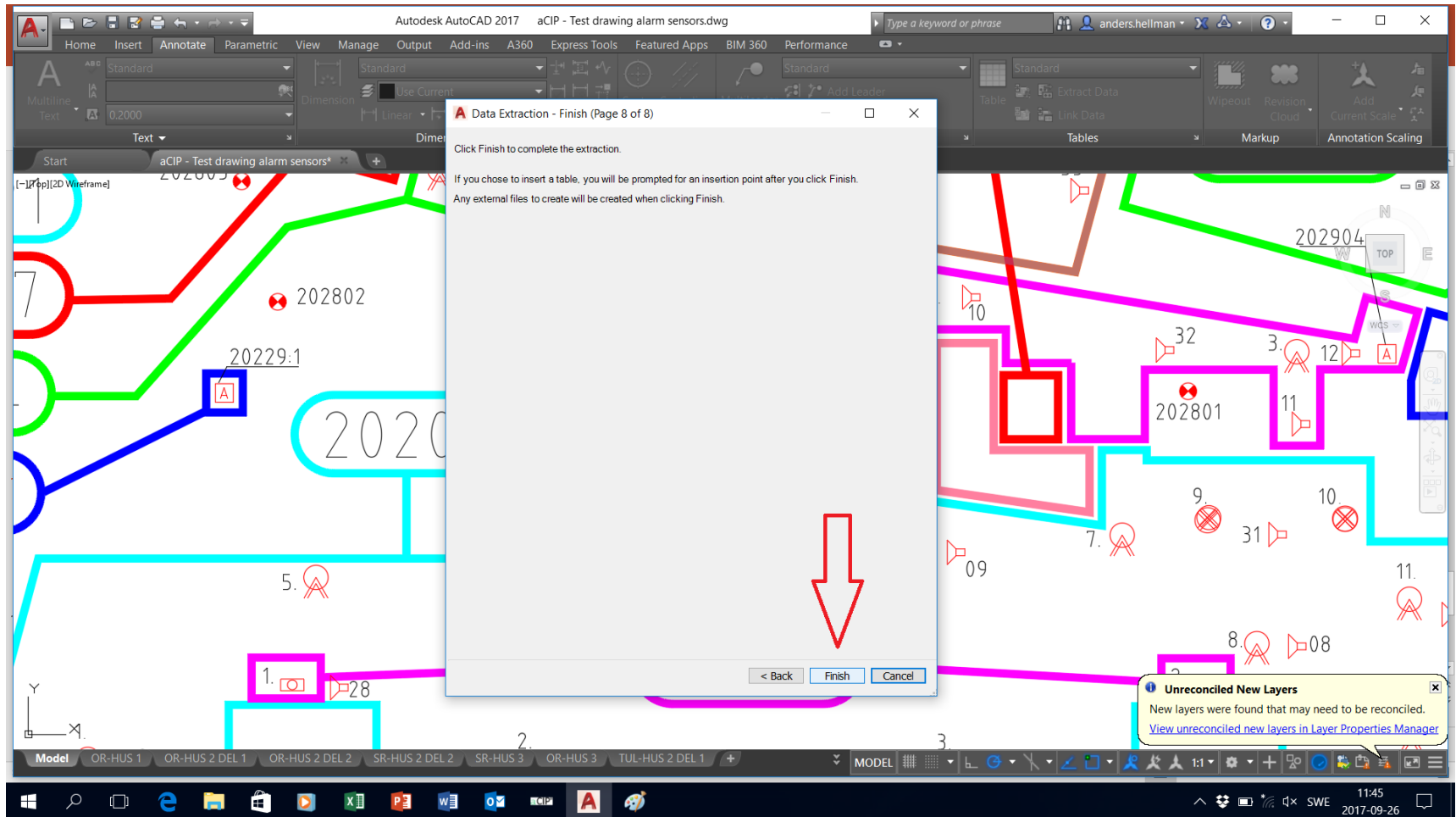
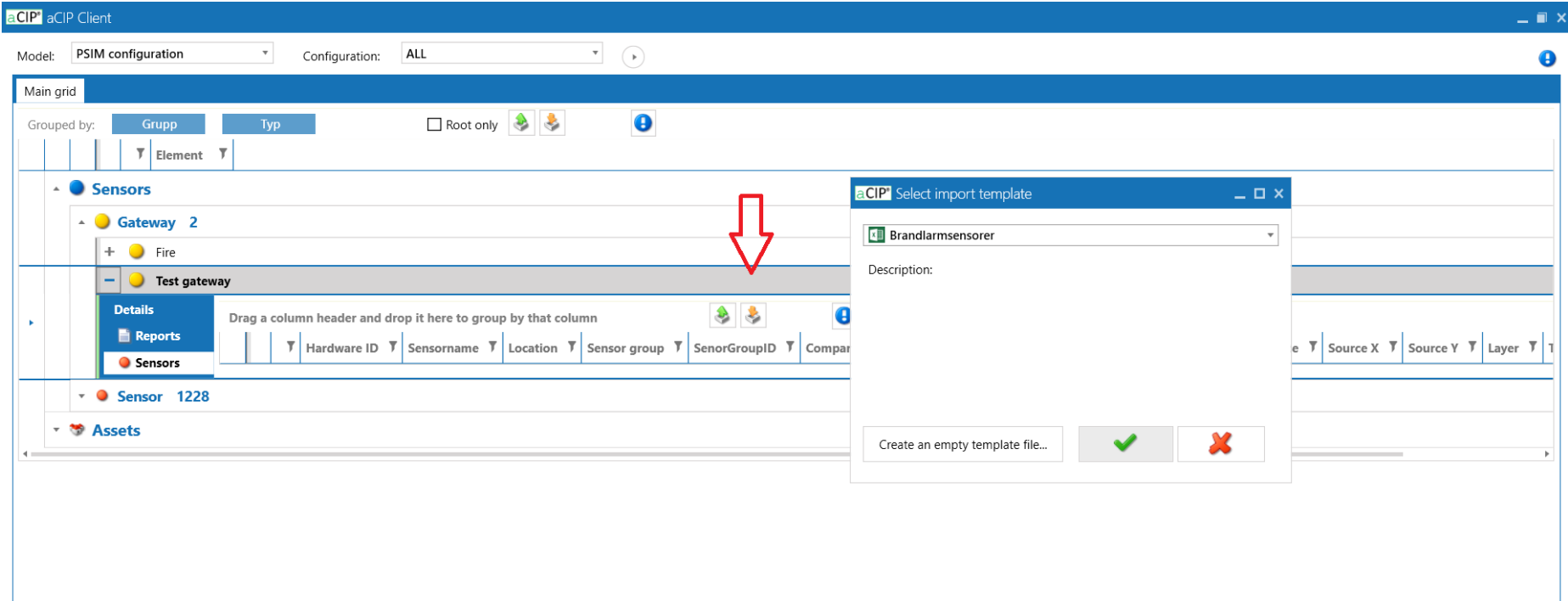- This is how an export file can look like

- Based on an aCIP import template designed for the target system in question, edit the data in Excel so it fits the template.
  - Coordinate columns shall be named Source X and Source Y.
  - Normally data are added to relate sensors from certain floors to certain target system map layers and sensor groups. Depending on target system any other relevant attributes can also be added.
  - Merge all sensors from all floor plans to a common file (make it quicker to import but it can be done floorplan by floorplan instead if you like

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- In aCIP:
  - Select a sensor gateway to use or create a new one
  - Select correct import template

- In aCIP:
  - Select file to import from (the one you just created)
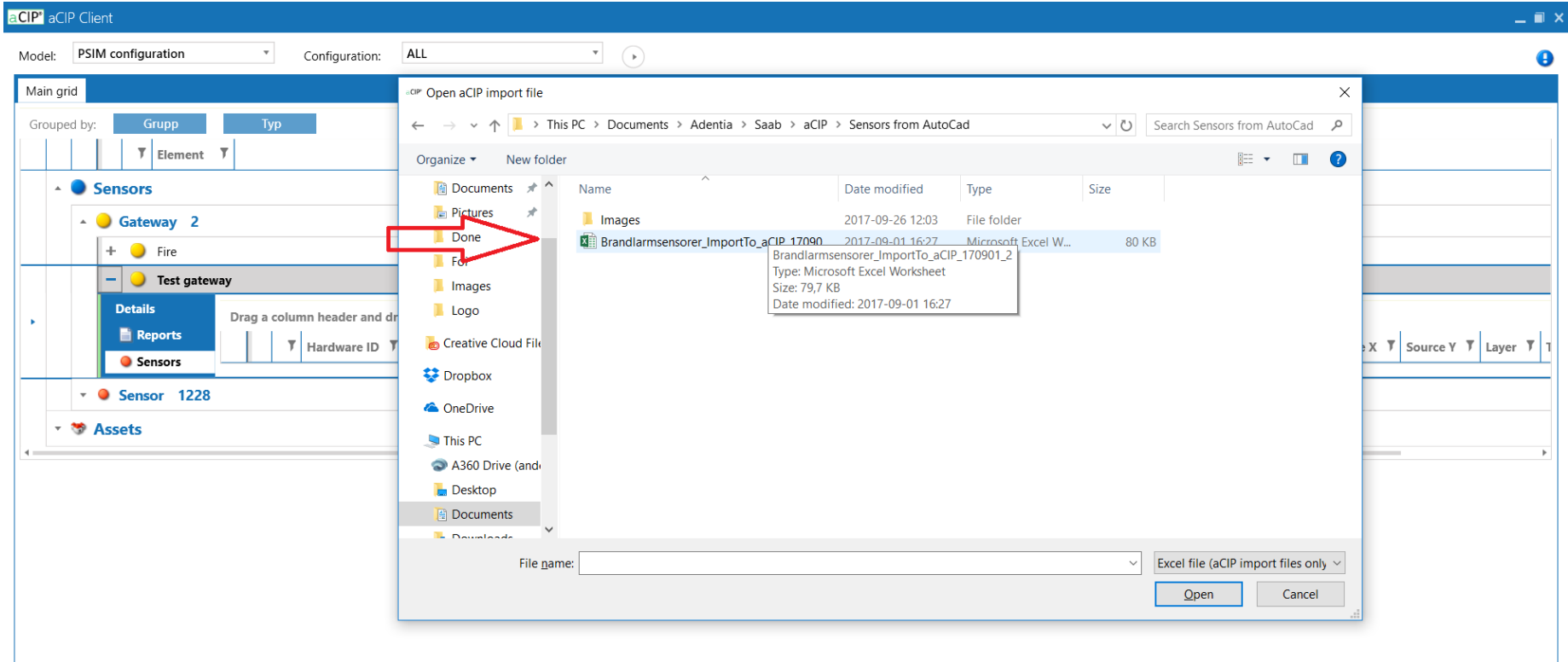
- In aCIP:
  - Importing sensors
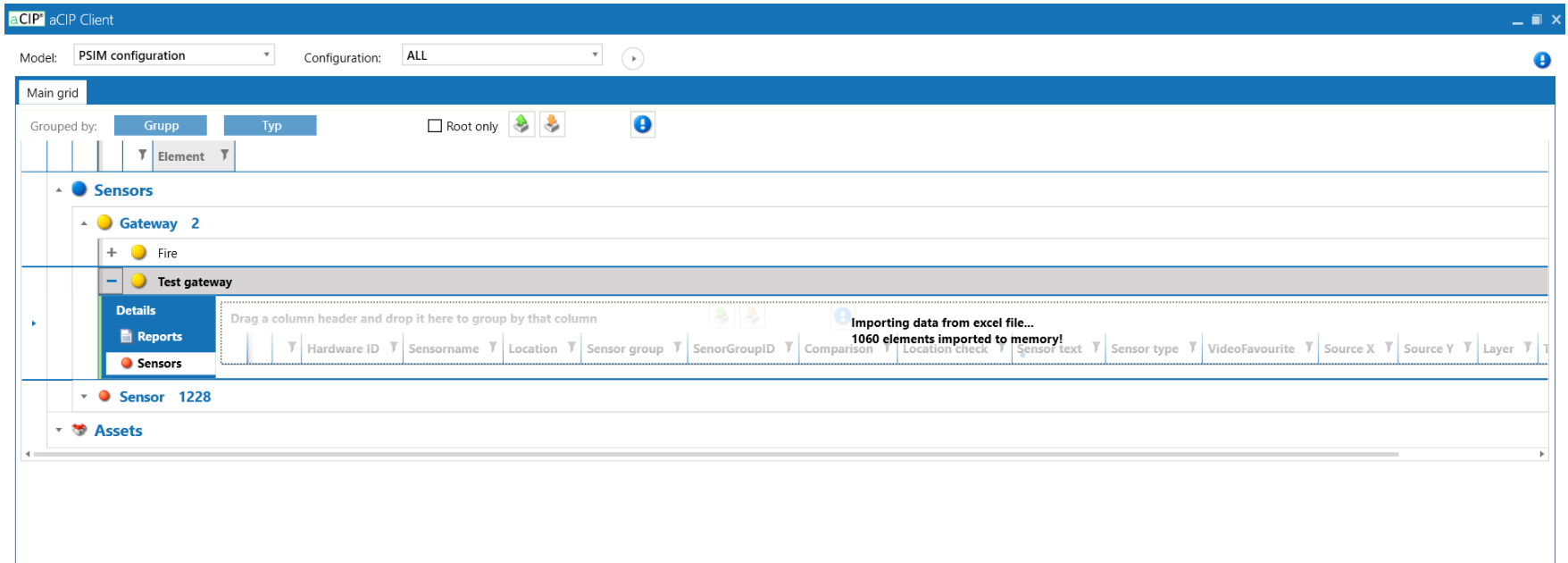
- In aCIP:
  - Preview sensors to import and, refine filtering even more if you like

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- In aCIP:
  - When happy, press import button

- In aCIP:
  - aCIP is now checking for other similar sensors in the database to eliminate duplicates. Good time to grab some coffee, this will take a while.

- In aCIP:
  - If similarities are found, decide how to handle them

- In aCIP:
  - Now, after a couple of confirm questions, the selected sensors are really imported to the aCIP database

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- In aCIP:
  - Now, sensors are imported to aCIP. As you can see target coordinates are empty. Time to create them.

- In aCIP:
  - First, some coordinate conversion parameters need to be defined (make sure to use enough precision = number of decimals)
  - Example:
    - The coordinates of origo in AutoCad
      - origoX = 18.0037020800492F
      - origoY = 59.3688017642466F
    - Tilt angle (degrees the AutoCad drawing up differs from straight north)
      - tiltAngle = 32
    - Millimeters per degree X and Y (example good for central Stockholm)
      - mmPerDegreeLongX = 57242640
      - mmPerDegreeLatY = 107005200;

- In aCIP:
  - Select feature "Calculate target coordinates"
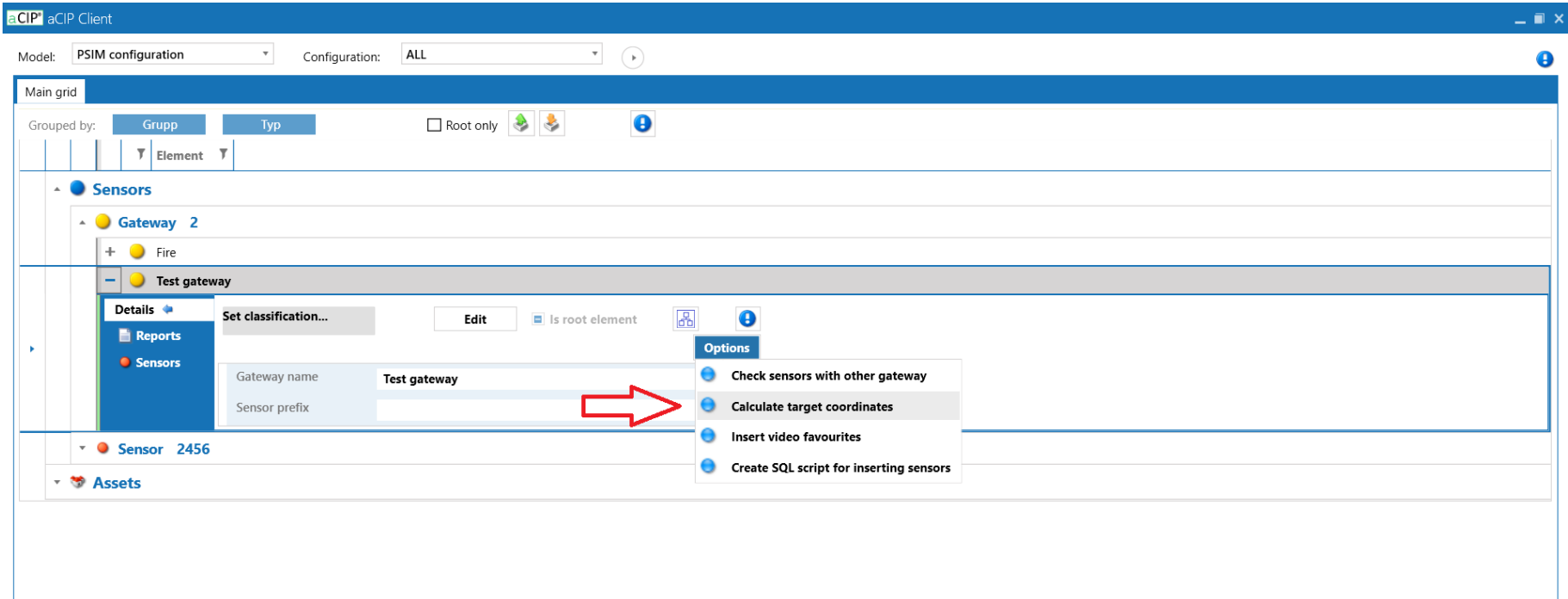
- In aCIP:
  - aCIP has now calculated the target coordinates for you

- In aCIP:
  - Time to create the import file for the target system. Depending on target system type it can be an SQL-script (as this example), an xml file, a csv file or something else.
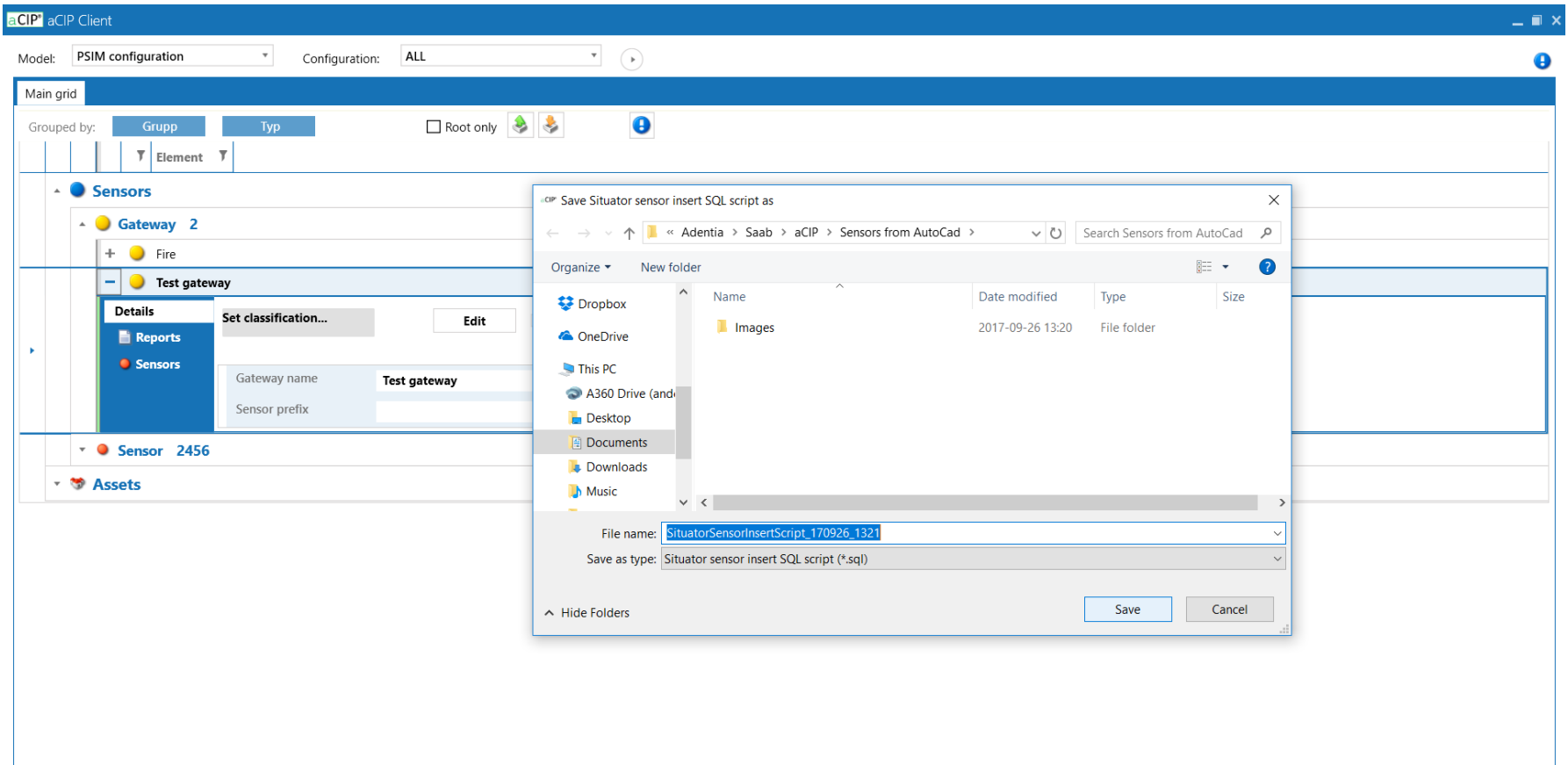
- ## And this is how it can look like:

1. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('10001-01','Fire alarm button','10001-01',7,203,'A0.00.',18.0042306168348,59.37872384228,0,328,'[Site=Head office]',3,1);
2. GO
3. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '10001-01'),3,886);
4. GO
5. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('10002-01','Fire alarm button','10002-01',7,203,'A0.00.',18.0047097620266,59.3790506691133,0,328,'[Site= Head office]',3,1);
6. GO
7. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '10002-01'),3,886);
8. GO
9. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('10002-02','Fire alarm button','10002-02',7,203,'A0.00.',18.0051114823581,59.3789406500116,0,328,'[Site= Head office]',3,1);
10. GO
11. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '10002-02'),3,886);
12. GO
13. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('20001-01','Fire alarm button','20001-01',7,203,'A0.00.',18.0047758193489,59.3784619006114,0,328,'[Site= Head office]',3,1);
14. GO
15. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '20001-01'),3,886);
16. GO
17. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('20001-02','Fire alarm button','20001-02',7,203,'A0.00.',18.0053201767987,59.3783129307202,0,328,'[Site= Head office]',3,1);
18. GO
19. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '20001-02'),3,886);
20. GO
21. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('20002-01','Fire alarm button','20002-01',7,203,'A0.00.',18.005946080252,59.3782252891969,0,328,'[Site= Head office]',3,1);
22. GO
23. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '20002-01'),3,886);
24. GO
25. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('20002-02','Fire alarm button','20002-02',7,203,'A0.00.',18.0060567061148,59.3784813216918,0,328,'[Site= Head office]',3,1);
26. GO
27. INSERT INTO dbo.GISEntitiesToLayers(EntityID, EntityType, LayerID) VALUES((SELECT SensorID FROM dbo.Sensors WHERE SensorHardwareID = '20002-02'),3,886);
28. GO
29. INSERT INTO dbo.Sensors(SensorName,SensorDescription,SensorHardwareID,SensorGatewayID,SensorTypeID,SensorLocation,X,Y,Z,GroupID,SensorAdditionalInfo,SensorMode,SensorState) VALUES('20002-03','Fire alarm button','20002-03',7,203,'A0.00.',18.0062016087957,59.3786210501904,0,328,'[Site= Head office]',3,1);
30. GO

So, + 1000 sensors now imported and positioned correctly on the correct layers in the target system.

Our experience is that importing and positioning 1000 sensors takes around two weeks with traditional methods.

Doing as described here with the help of aCIP the same work is done 1-2 days, depending on the quality of the AutoCad drawings.

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The art of creating order

Thanks for attending!