ICC Data Optimization for Onyx and Thrive Media Manager Software

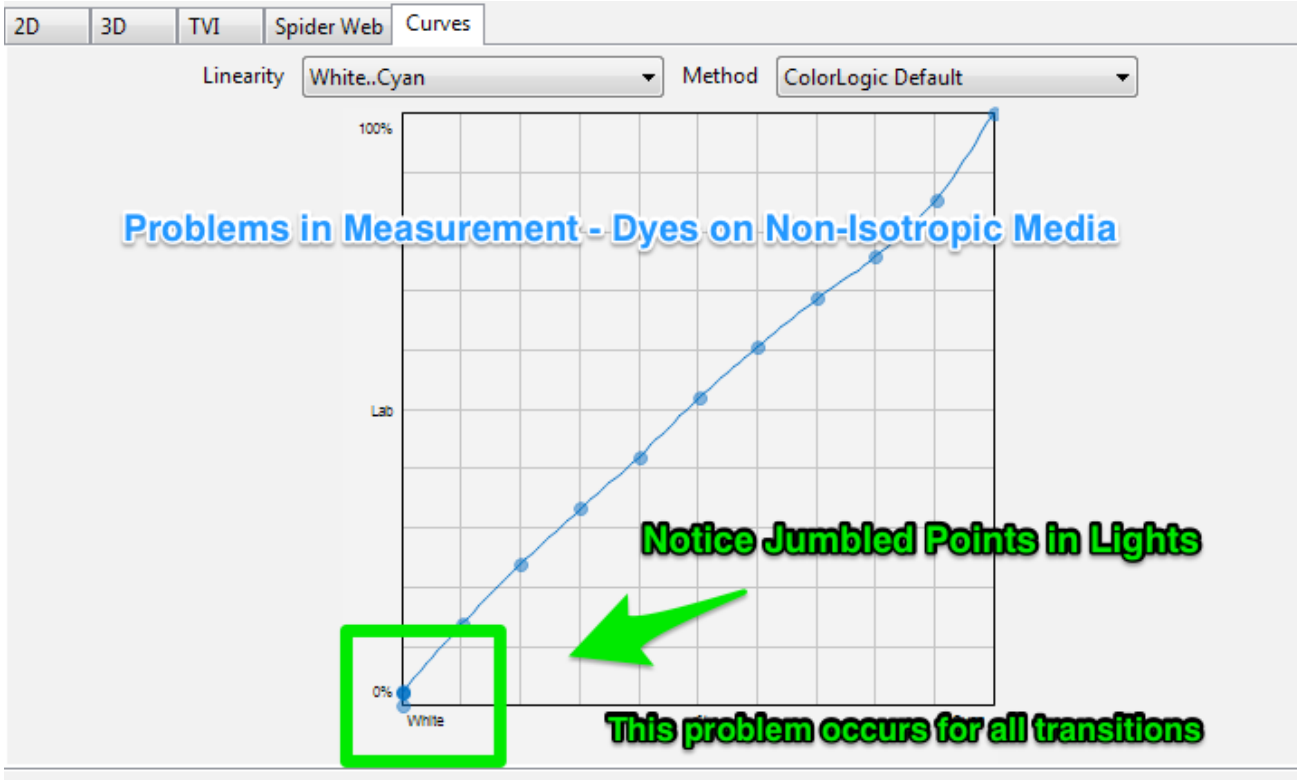
This technical note has three purposes:

- Identify and illustrate typical ICC data measurement errors when reading patch sets printed on fabric and other non-iotropic media with typical spectrophotometers.
- Describe how to use *Onyx ICC Data Converter* software to extract measurement data from Onyx and Thrive Media Manager in a format that can be used with 3rd party color measurement optimization software.
- Describe how to use *Onyx ICC Data Converter* software to import optimized color measurement data into Onyx and Thrive Media Manager.

Section 1: Problem Overview

Onyx Media Manager linearizes primary colors (CMYK) based on colorimetry. This is more accurate for CMYK digital printing than density based measures. The ideal is a 45° curve. But errors in measurement can result in deviations from the ideal. These errors can be detected and the patch measurements for the ICC profile can be improved by using ICC patch optimization programs.

In this case, ColorAnt from ColorLogic has been used to analyze the swatch measurements. The graph to the right is an actual measurement of a patch set printed with dye sublimation ink on soft knit polyester fabric. It shows a small divergence from a straight 45° curve. More significantly, there are a jumble of points on in the very light shades. Other graphs in ColorAnt on the next pages show related measurement errors evidenced in the Spider Web and TVI curves.



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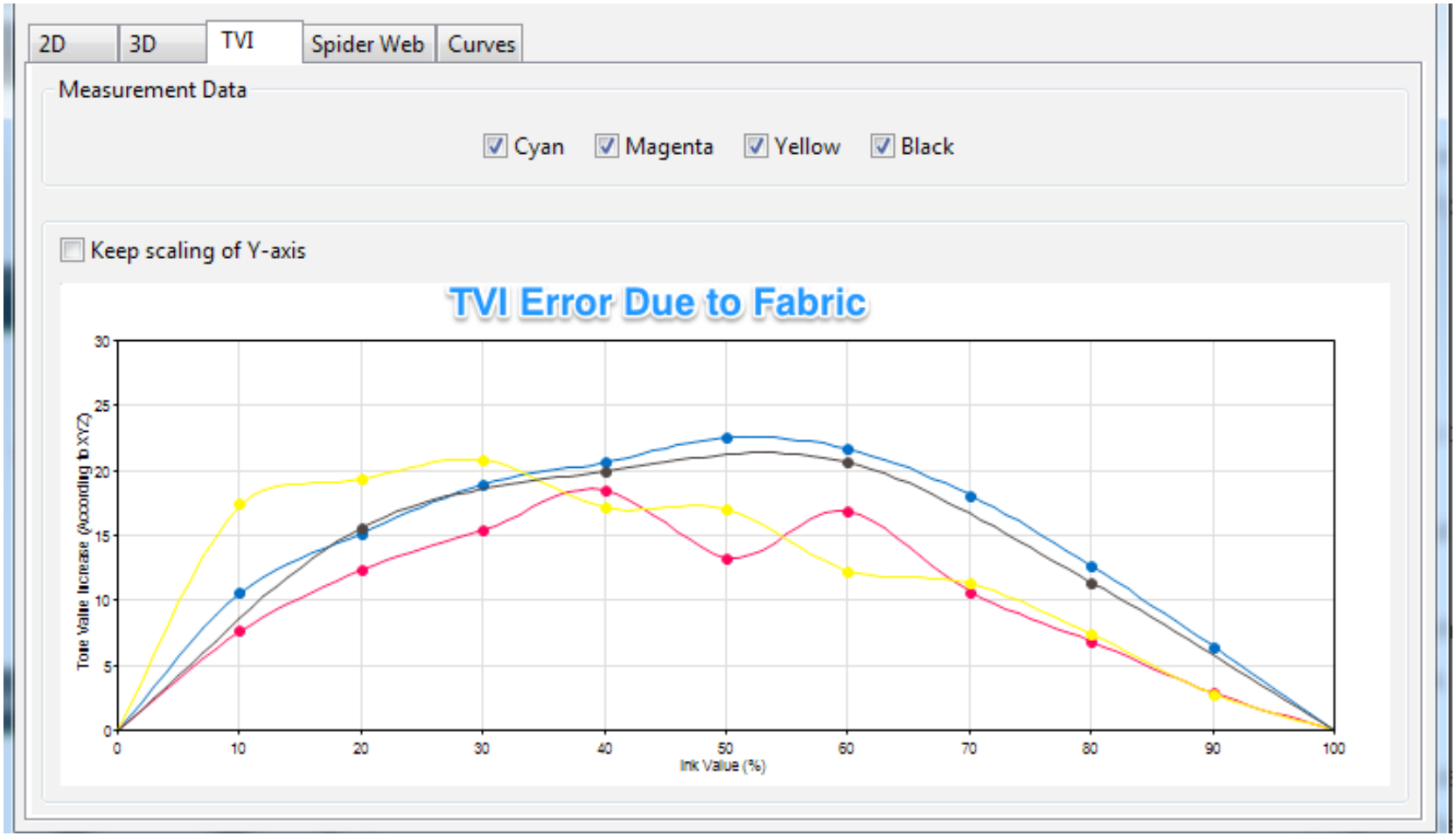
basICColor IMProve programs, trademarks, copyrights, and intellectual property are owned by basICColor GMBH.

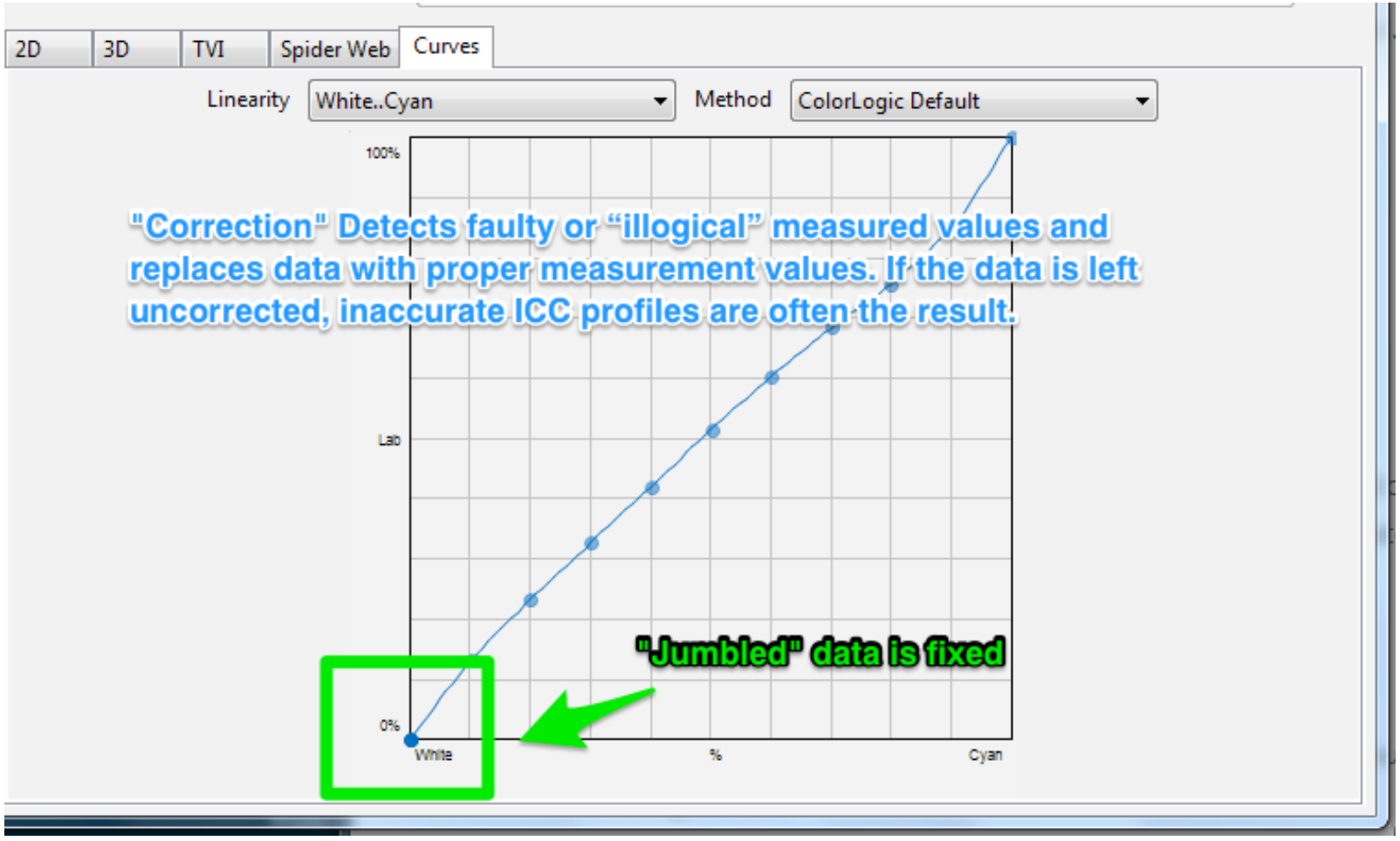
Section 1: Problem Overview (Continued)

These are the TVI (tone value increase) curves from the same soft knit data set. The curves are relatively smooth, but there is probably measurement error in the magenta curve. As a check on this, the measurement was repeated several times and averaged. The "roller coater" in the data went away, confirming that the initail measurement was not optimal.



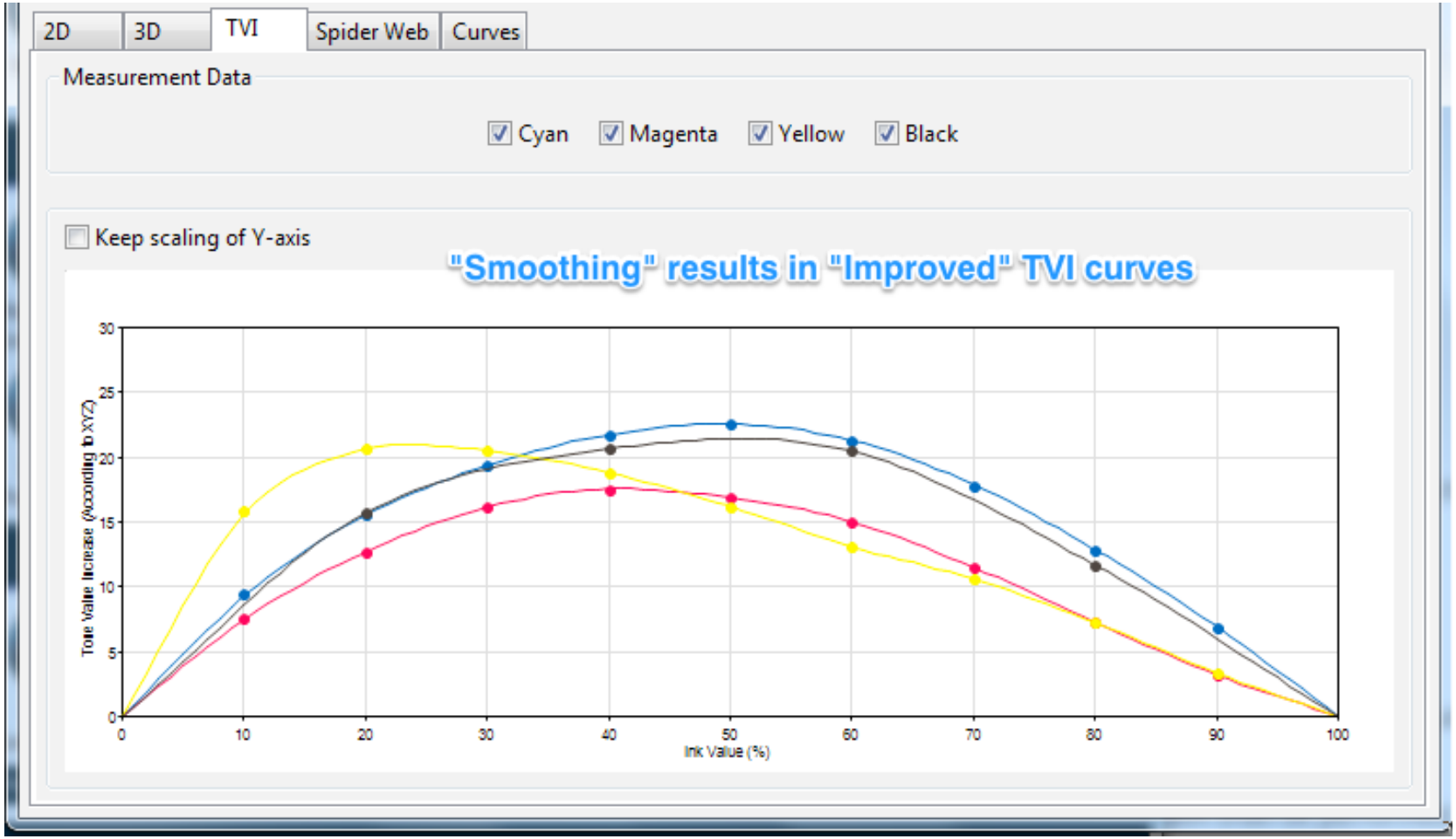
Section 1: Problem Overview (Continued)

This is a graph of the measurement data that was optimized using ColorAnt. Notice that the "jumbled" data at the very light end of the graph is eliminated.



Section 1: Problem Overview (Continued)

Optimization also smoothed the TVI data.



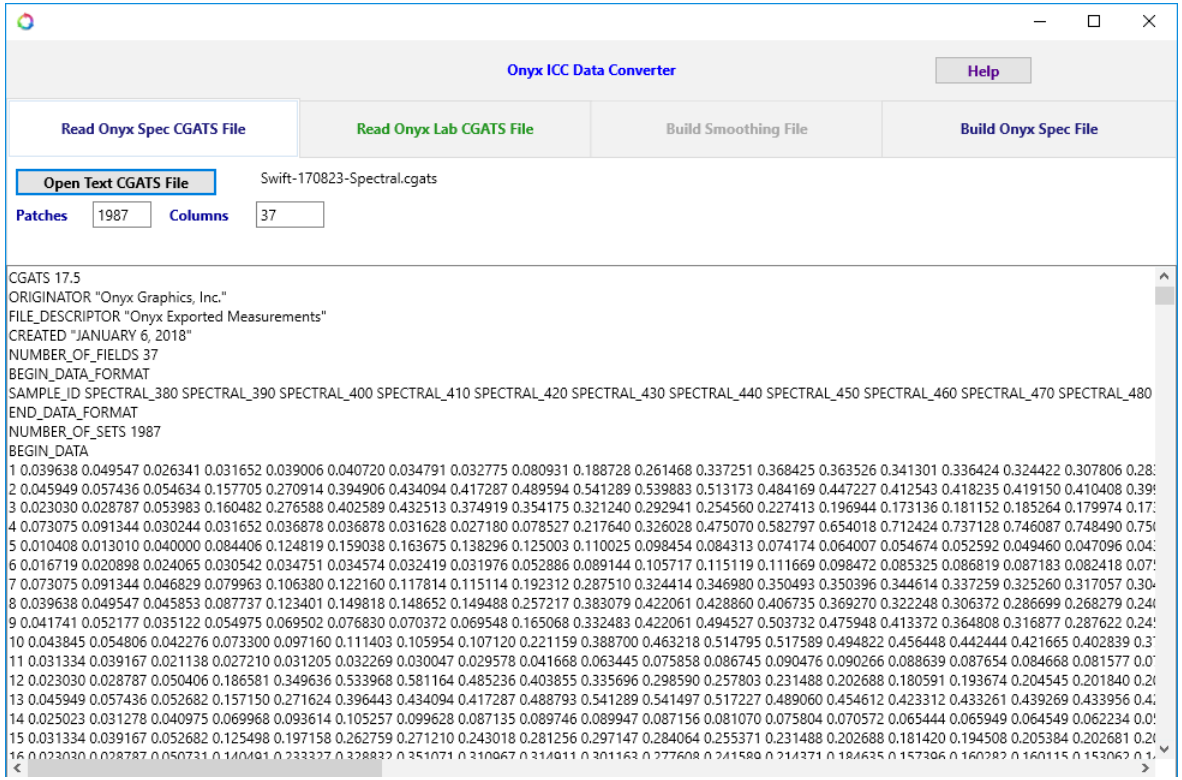
These examples are from ColorAnt. basICColor IMProve does the same.

When using optimization software, make sure not to let the software eliminate redundant patch measurements. This is because Onyx Media Manager requires the measurement data to match the specifications for what was printed.. So eliminating patches will cause a data mismatch and an ICC processing error.

Section II: Install *Onyx ICC Data Converter* Software

Onyx ICC Data Converter is free software from VistaLogics. It converts files produced by Onyx and Thrive Media Manager into a format that can be used by programs that analyze, correct, and smooth CGATS formatted ICC profie measurement data. The *Onyx ICC Data Converter* program is required because Media Manager does not create a CGATS file with the exact data format required for color data optimization by programs such as ColorAnt or IMProve. ColorAnt is a product of ColorLogic GMBH and BasICColor IMProve is a product of basICColor GMBH.

INSTALLATION: Go to ONYX ICC Data Converter Installer (http://www.vistalogics.com/onyx-icc-data-smoothing.html)
or
Click here to Install Onyx ICC Data Converter.

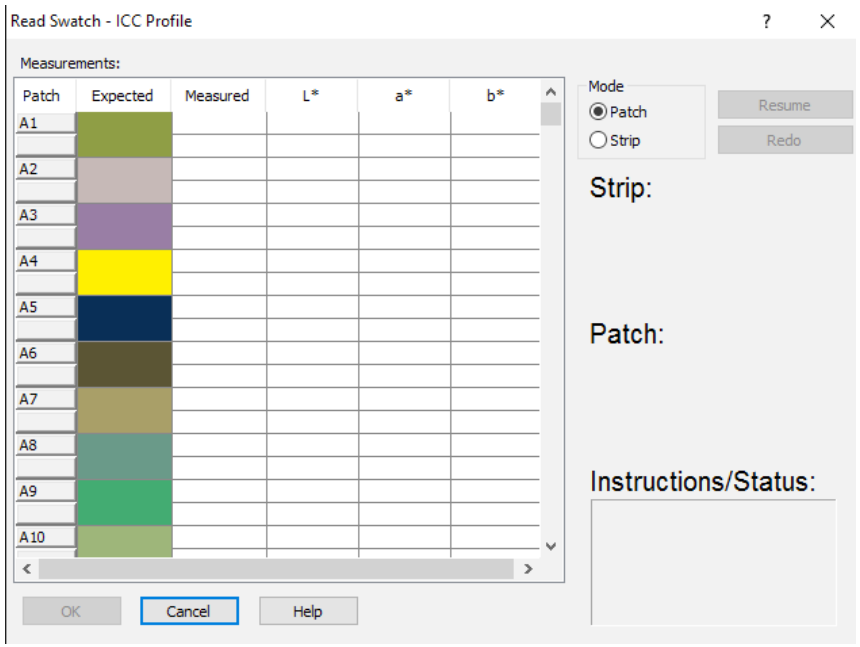


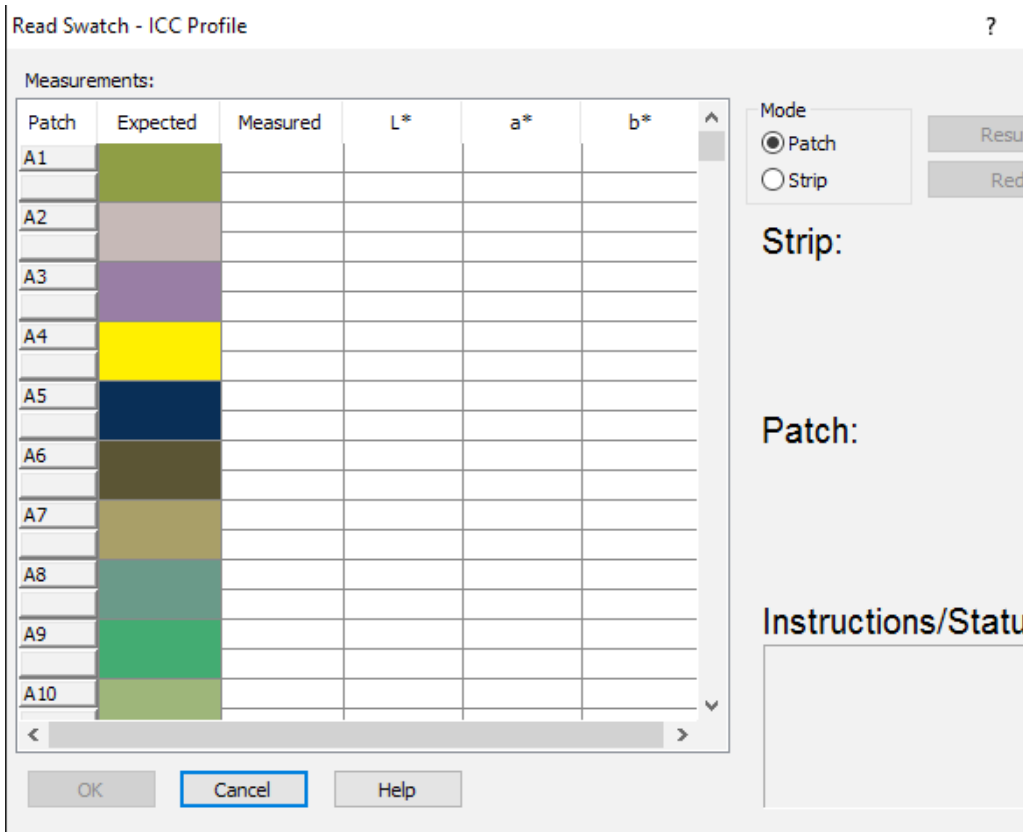
Section III: Exporting ICC Data Measurement Files from Media Manager

Onyx ICC Data Converter is free software from VistaLogics. It converts files produced by Onyx and Thrive Media Manager into a format that can be used by programs that analyze, correct, and smooth CGATS formatted ICC profie measurement data. The *Onyx ICC Data Converter* program is required because Media Manager does not create a CGATS file with the exact data format required for color data optimization by programs such as ColorAnt or IMProve. ColorAnt is a product of ColorLogic GMBH and BasICColor IMProve is a product of basICColor GMBH.

STEP 1:

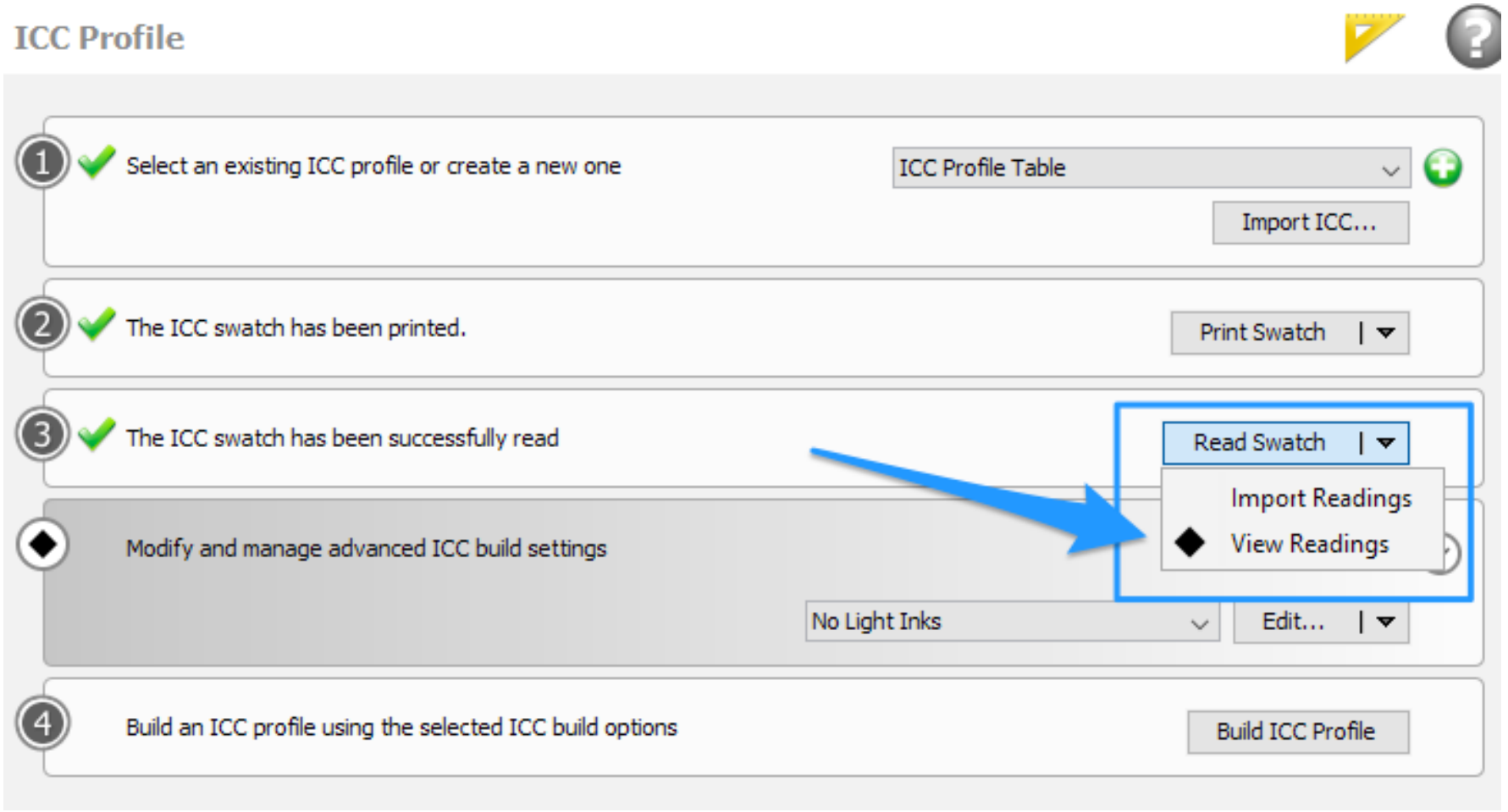
- Go to Onyx or Thrive Media Manager.
- Print and Read the ICC Profile Patch Set using the Media Manager Tools.





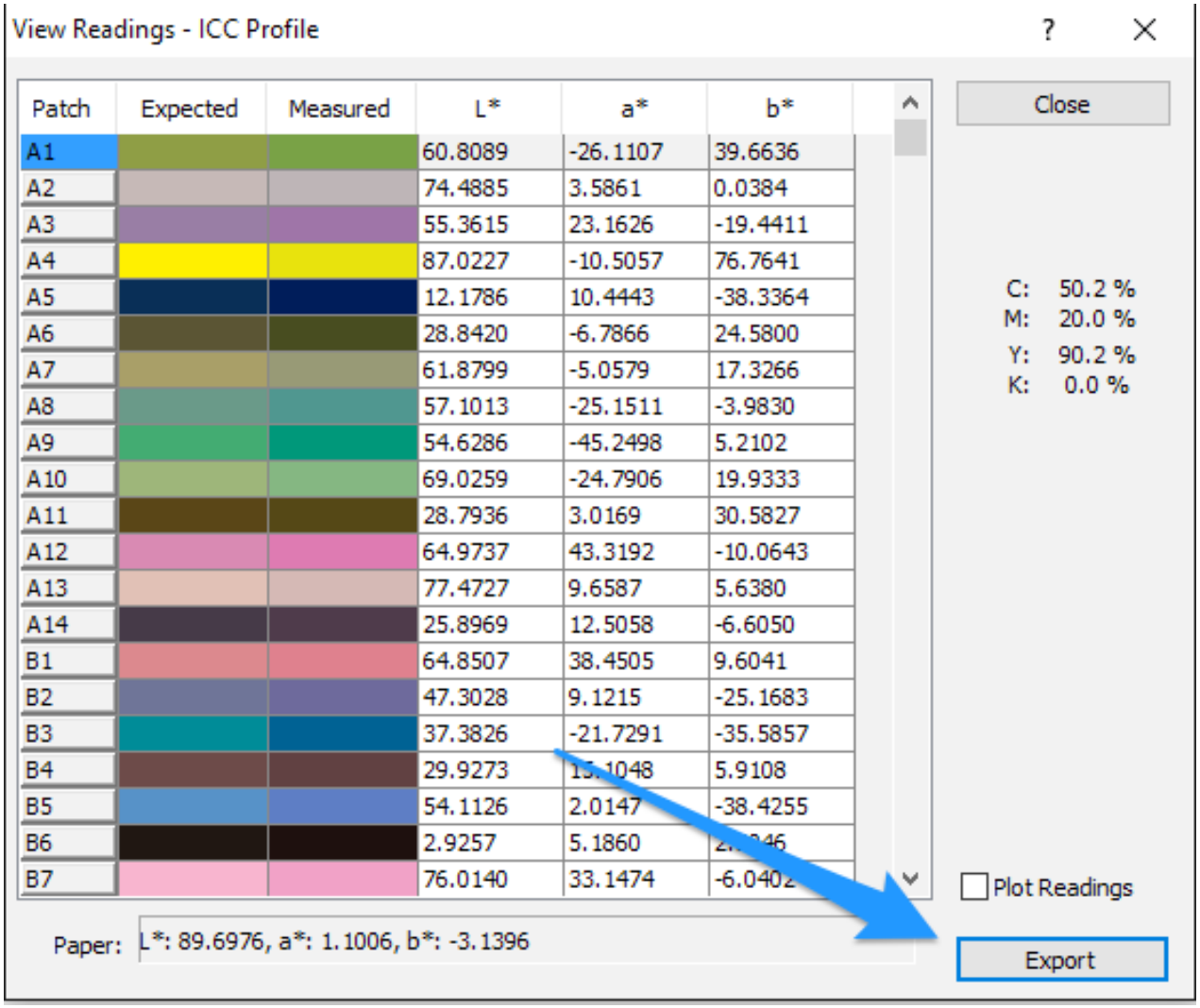
Section III: Exporting ICC Data Measurement Files from Media Manager (Continued)

STEP 2: Click to View the ICC patch Set Readings.



Section III: Exporting ICC Data Measurement Files from Media Manager (Continued)

STEP 3: Click to Export the ICC Measurements.



Section III: Exporting ICC Data Measurement Files from Media Manager (Continued)

STEP 4: Save the Spectral and Lab CGATS files.

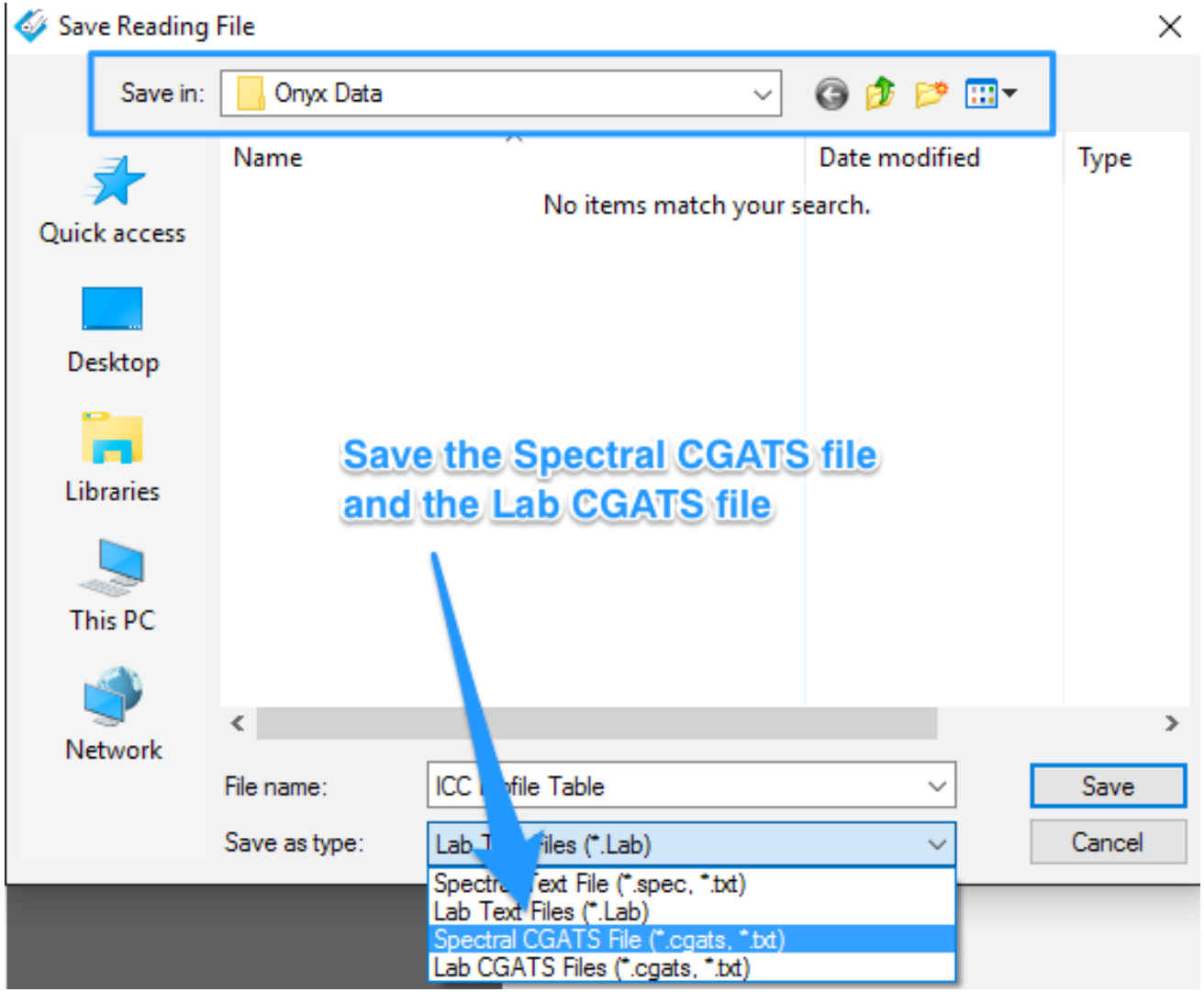
Save 2 Reading Files:

1. Spectral CGATS
2. Lab CGAT

You can use either the .CGATS or the .txt fike suffix.

Make sure you save with different names so you can distinguish between the Spectral and Lab CGATS file.

Make sure you know where the files are saved.



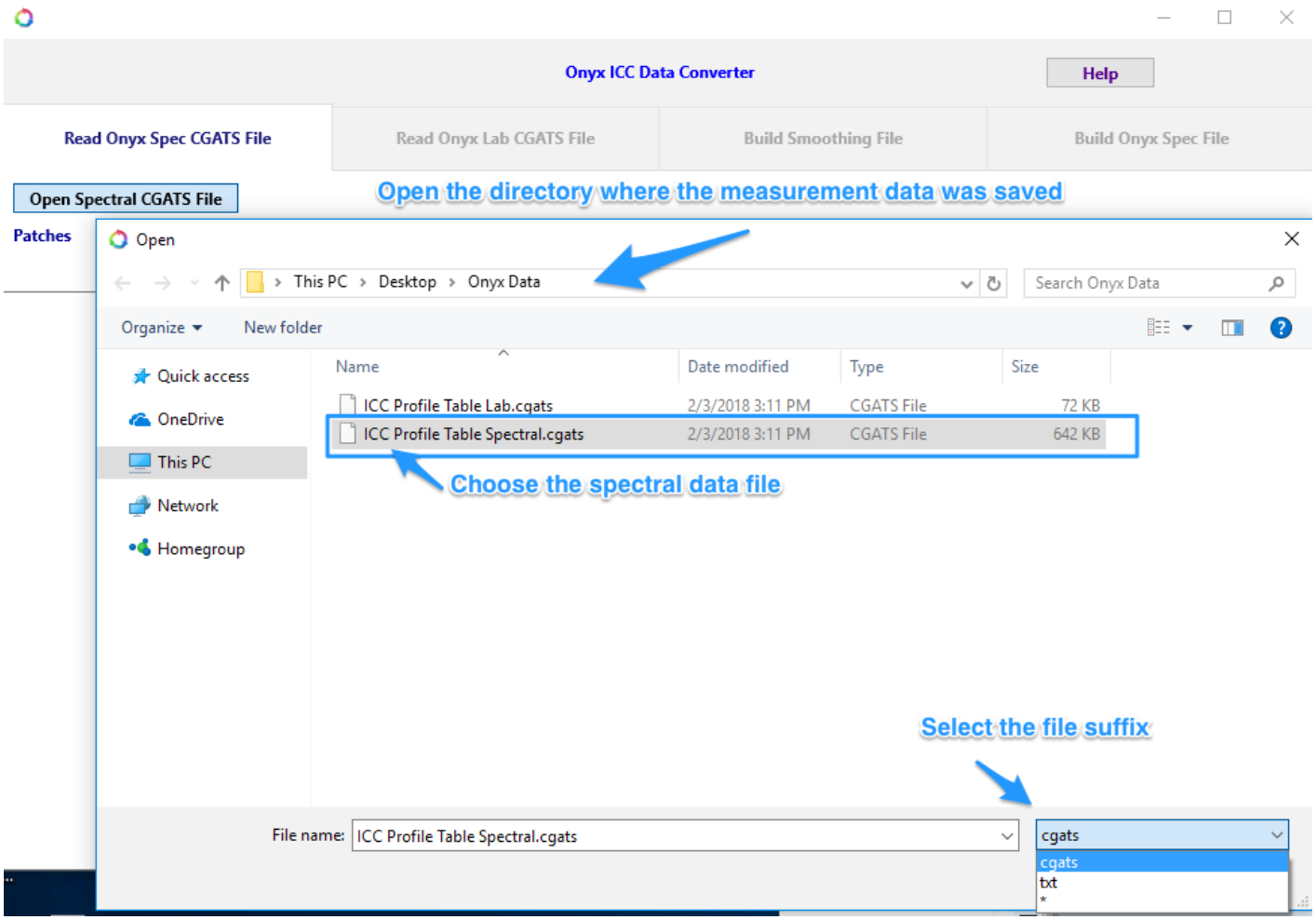
Section IV: Using *Onyx ICC Data Converter* Software to Produce Files to Optimize Measurement Data

STEP 1: Open the Onyx Spectral CGATS File

Open the Onyx ICC Data Converter program:

Make sure you selet the directory where the Onyx measurement fikes were saved.

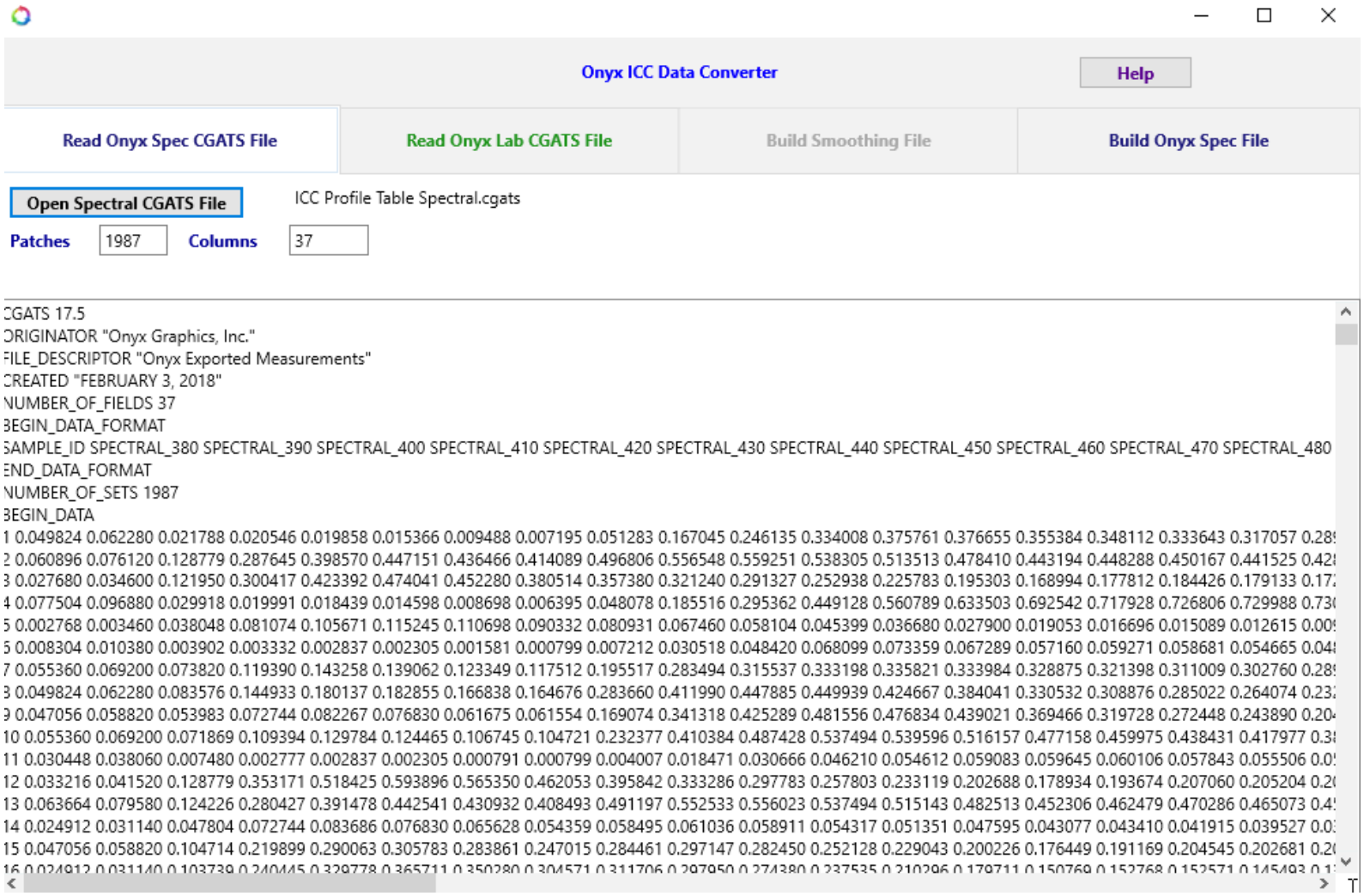
Open the Onyx Spectral CGATS file



Section IV: Using *Onyx ICC Data Converter* Software to Produce Files to Optimize Measurement Data (Continued)

STEP 2: View the Onyx Spectral CGATS File

If the Spectral CGATS file is read correctly, the data will show in the tabbed window.

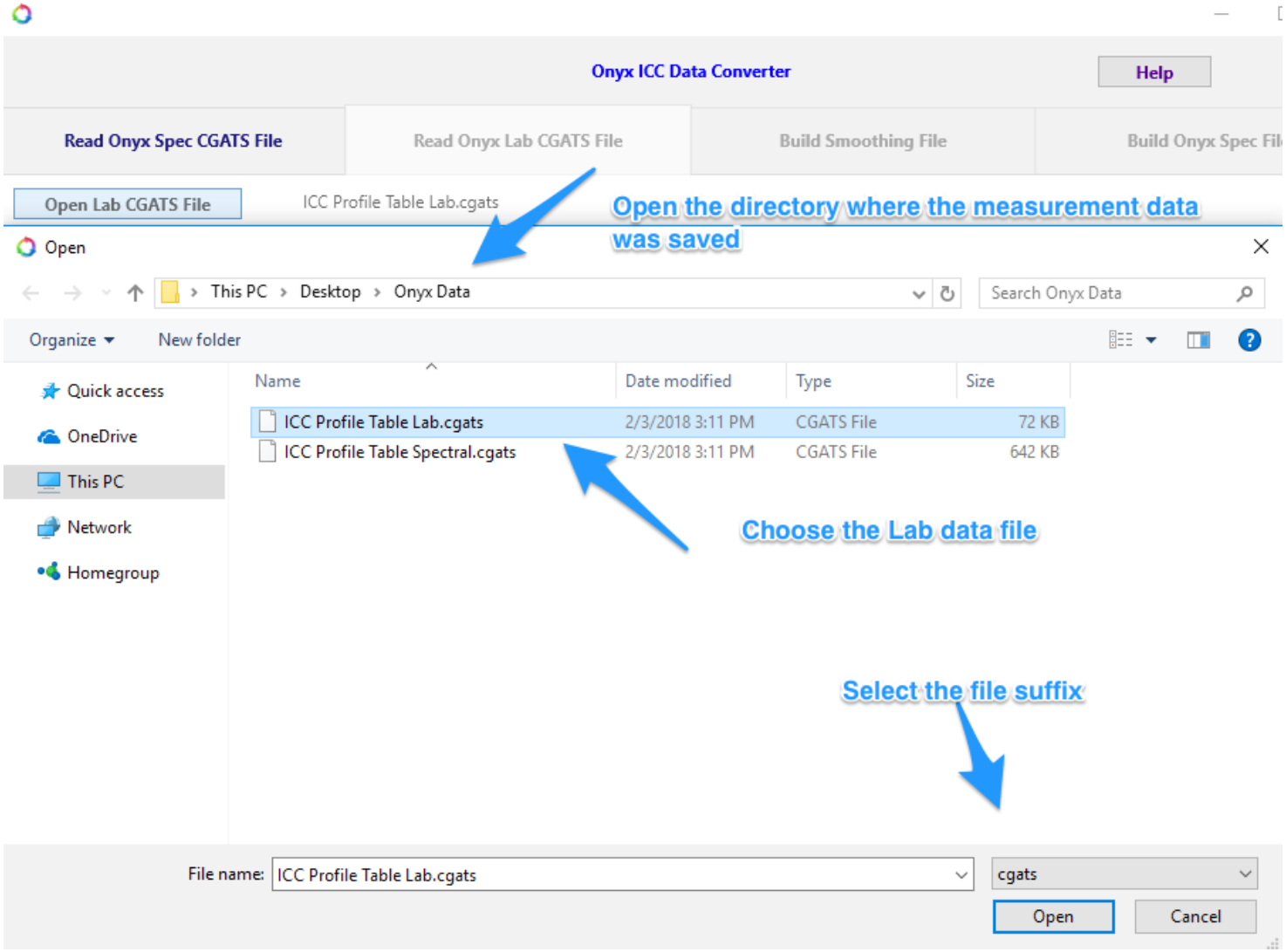


Section IV: Using *Onyx ICC Data Converter* Software to Produce Files to Optimize Measurement Data (Continued)

STEP 3: Open the Onyx Lab CGATS File

Switch to the second tab in the program.

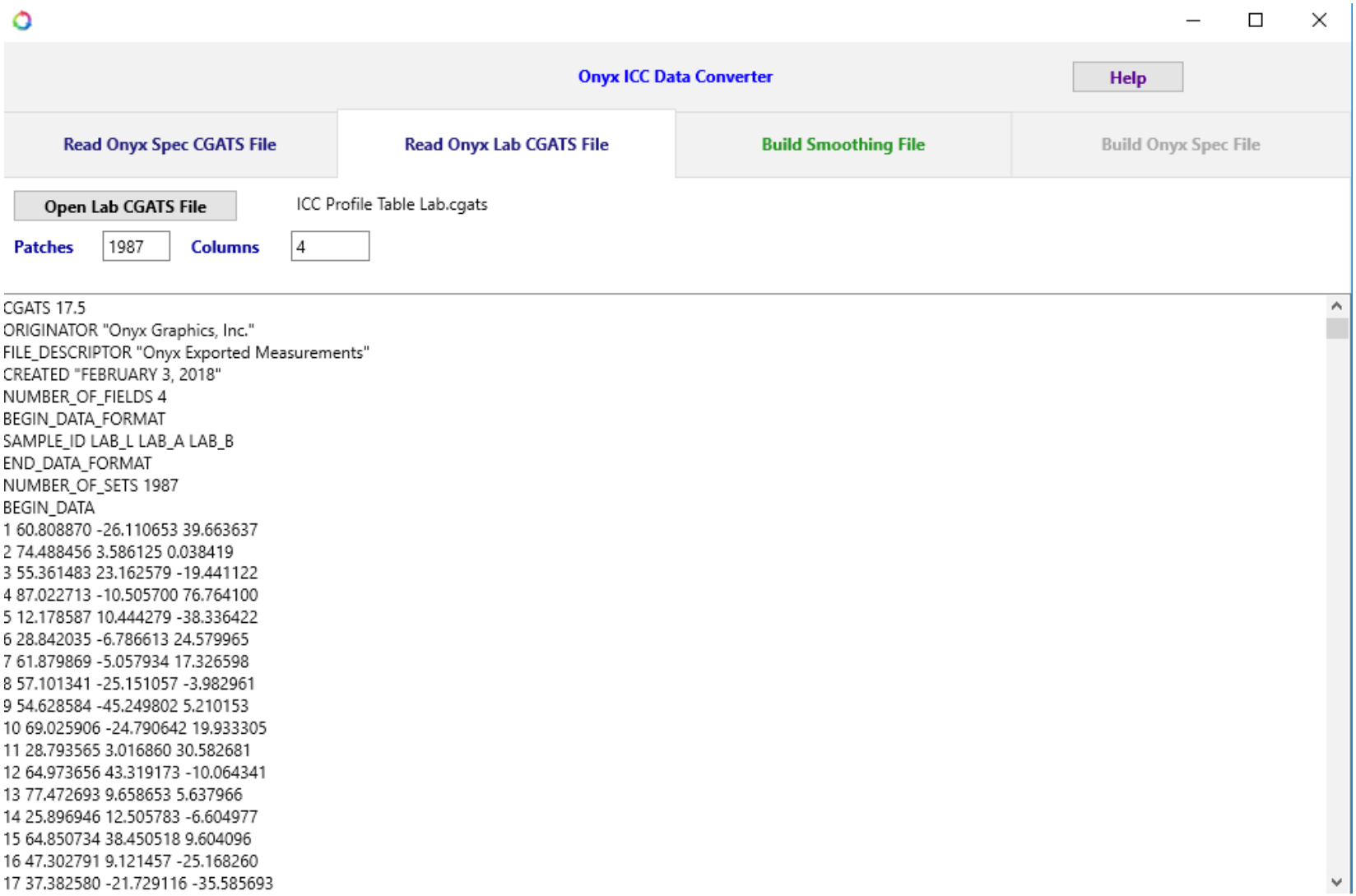
Open the Onyx Lab CGATS file



Section IV: Using *Onyx ICC Data Converter* Software to Produce Files to Optimize Measurement Data (Continued)

STEP 4: View the Onyx Lab CGATS File

If the Spectral CGATS file is read correctly, the data will show in the tabbed window.



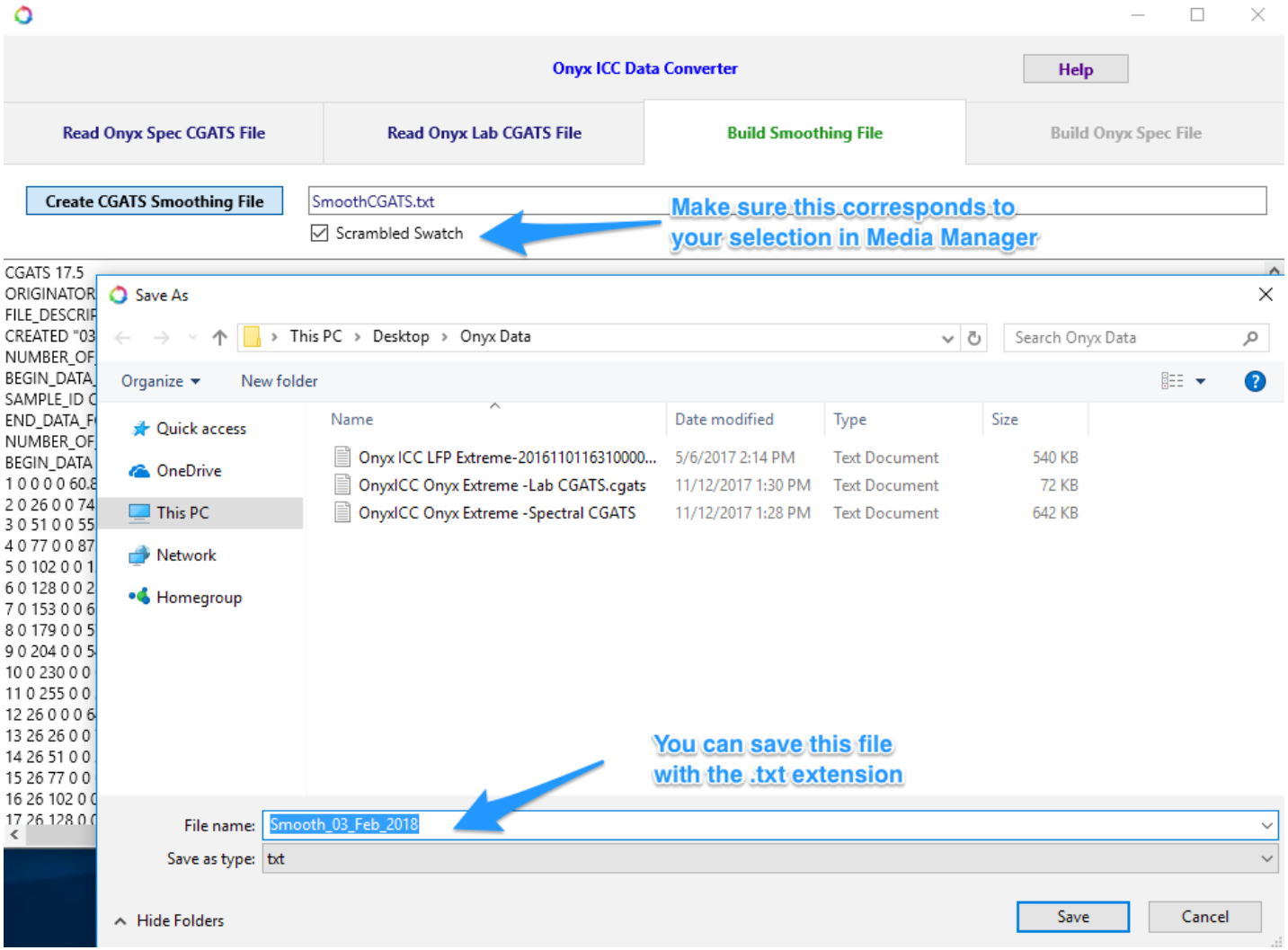
Section IV: Using *Onyx ICC Data Converter* Software to Produce Files to Optimize Measurement Data (Continued)

STEP 5: Create and Save the CGATS File that will be used in your Data Optimization Program

Switch to the third tab in the program.

Save the CGATS file.

The newly created CGATS file can be used in a program that will optimize the color data.



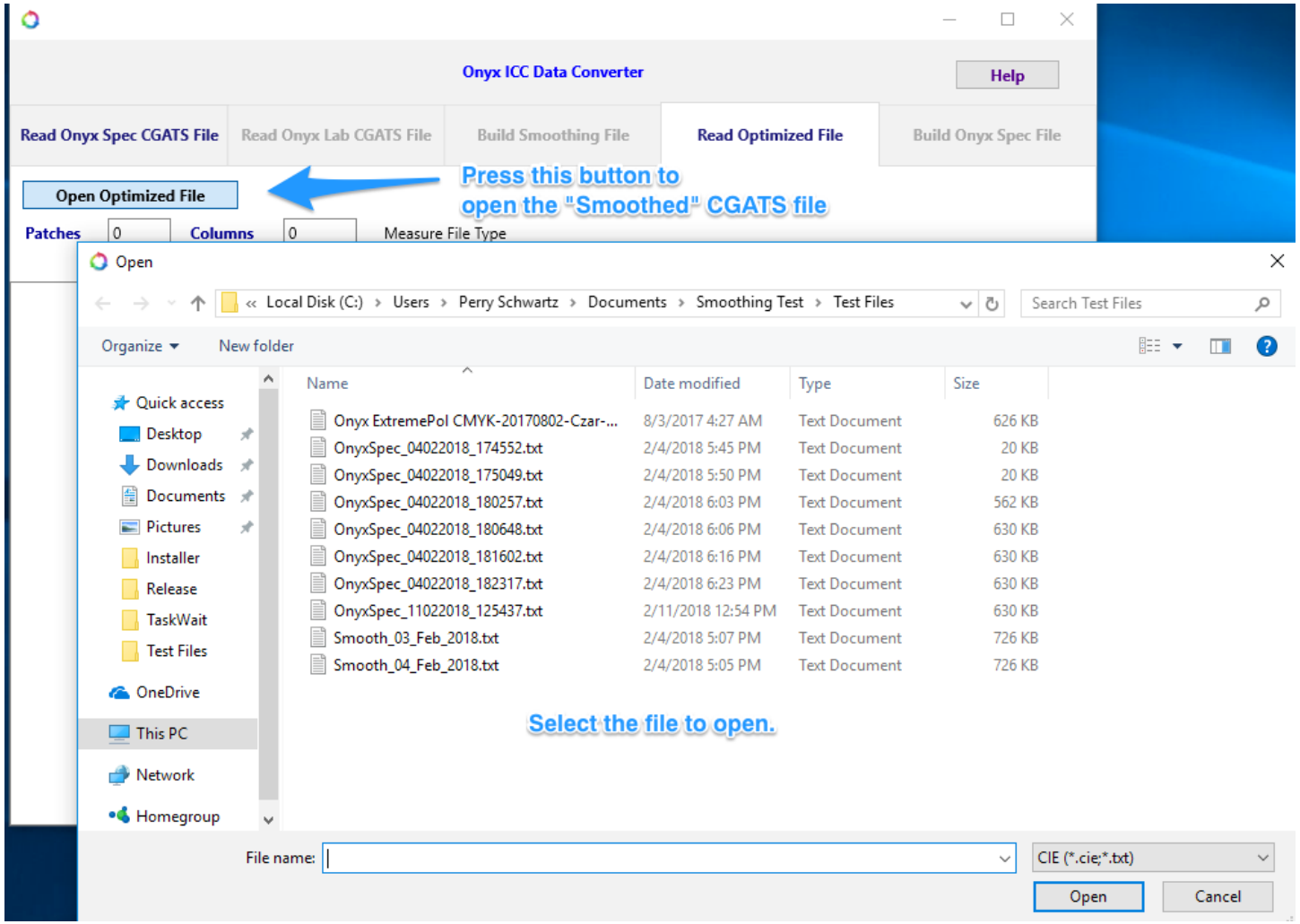
Section V: Convert the Optimized Data into an Onyx Spectral File for use with Media Manager

Once you have a CGATS file with optimized color data, you will need to convert the data into a format that can be used by Media Manager.

STEP 1: Open the Optimized CGATS File

Switch to the fourth tab in the program.

Open the Optimized CGATS file.



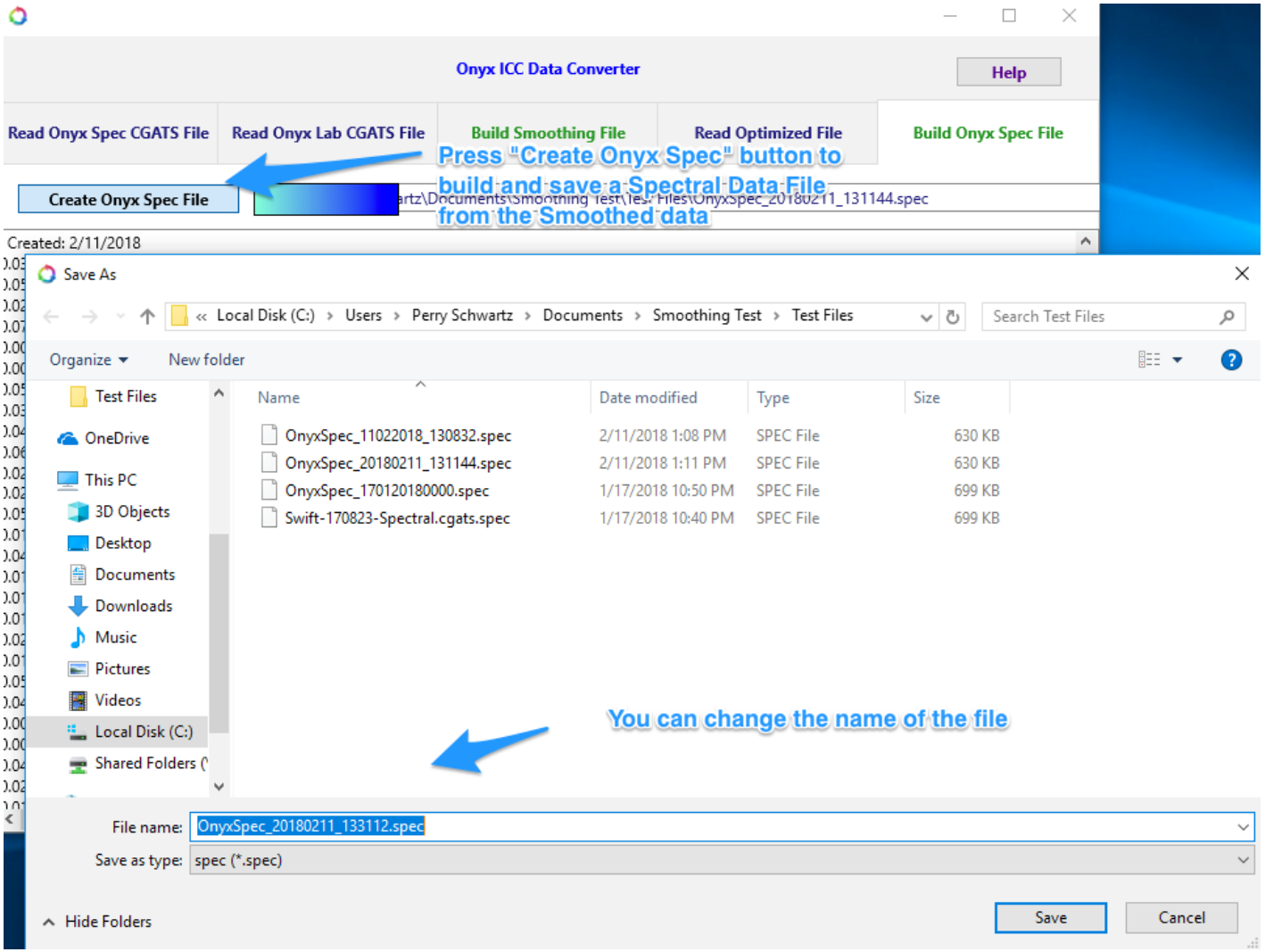
Section V: Convert the Optimized Data into an Onyx Spectral File for use with Media Manager

STEP 2: Create and Save the Spectral File for Media Manager.

Switch to the fourth tab in the program.

Save the Spectral data file.

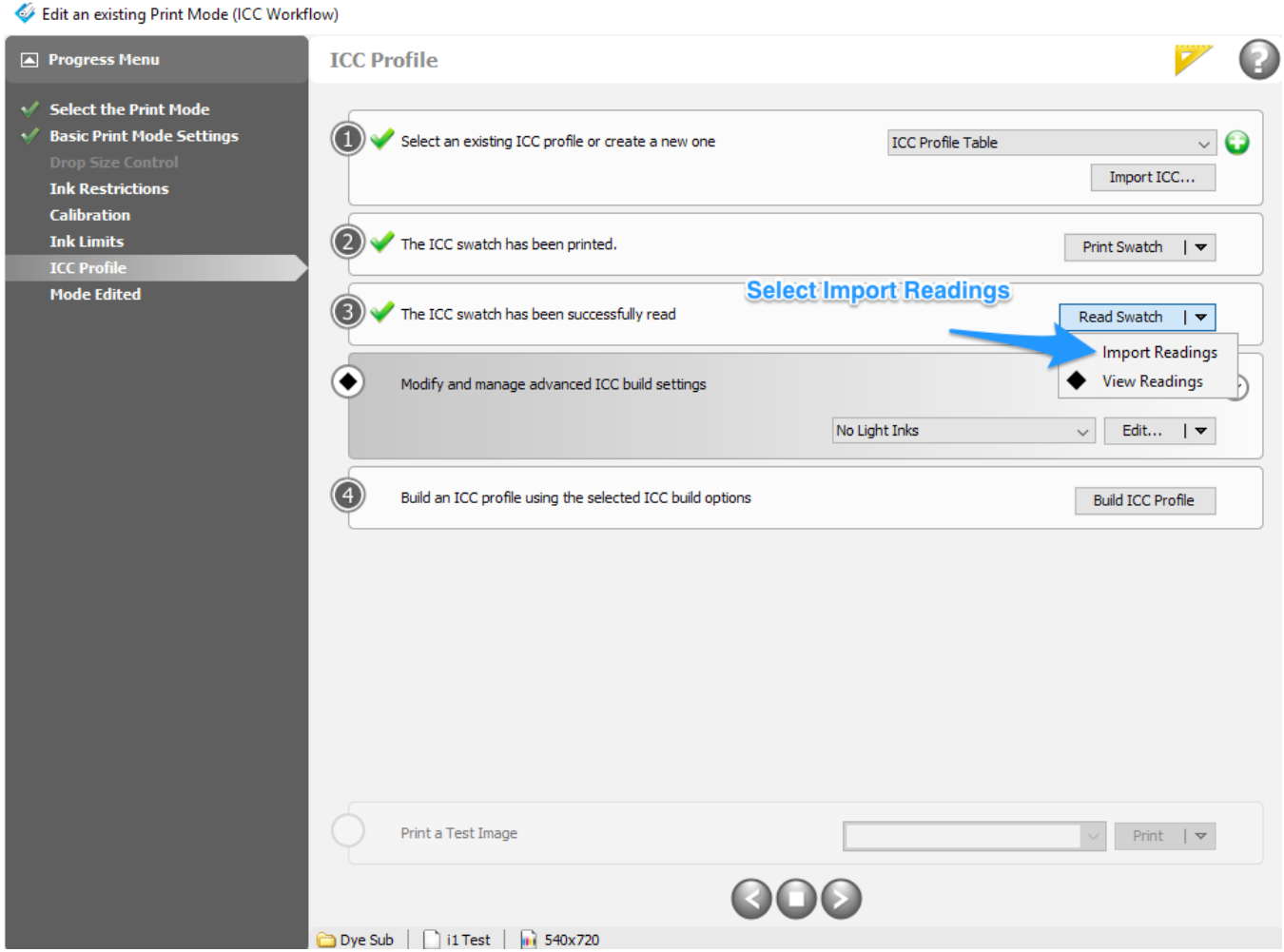
The Spectral data file will be used by Media Manager.



Section VI: Import the Optimized Spectral Data into Media Manager (Continued)

Finally, go back to Media Manager and Import the Optimized Spectral Data for builidng the ICC Profile.

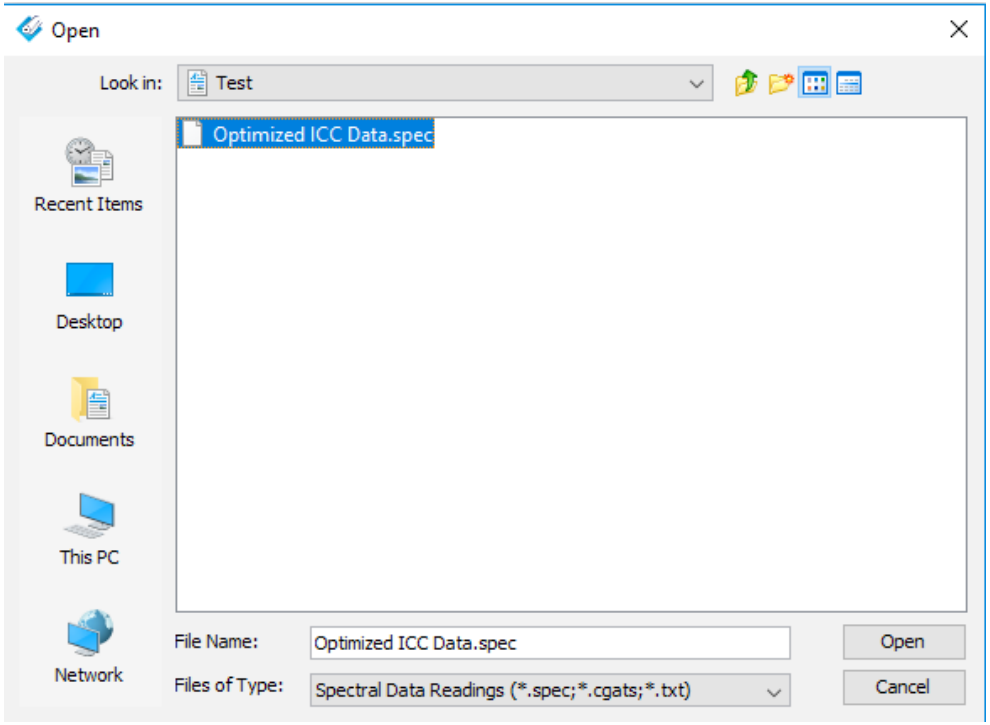
STEP 1: Select "Import Readings." This will overwrite the existing data.



Section VI: Import the Optimized Spectral Data into Media Manager (Continued)

STEP 2: Select the Optimized file.

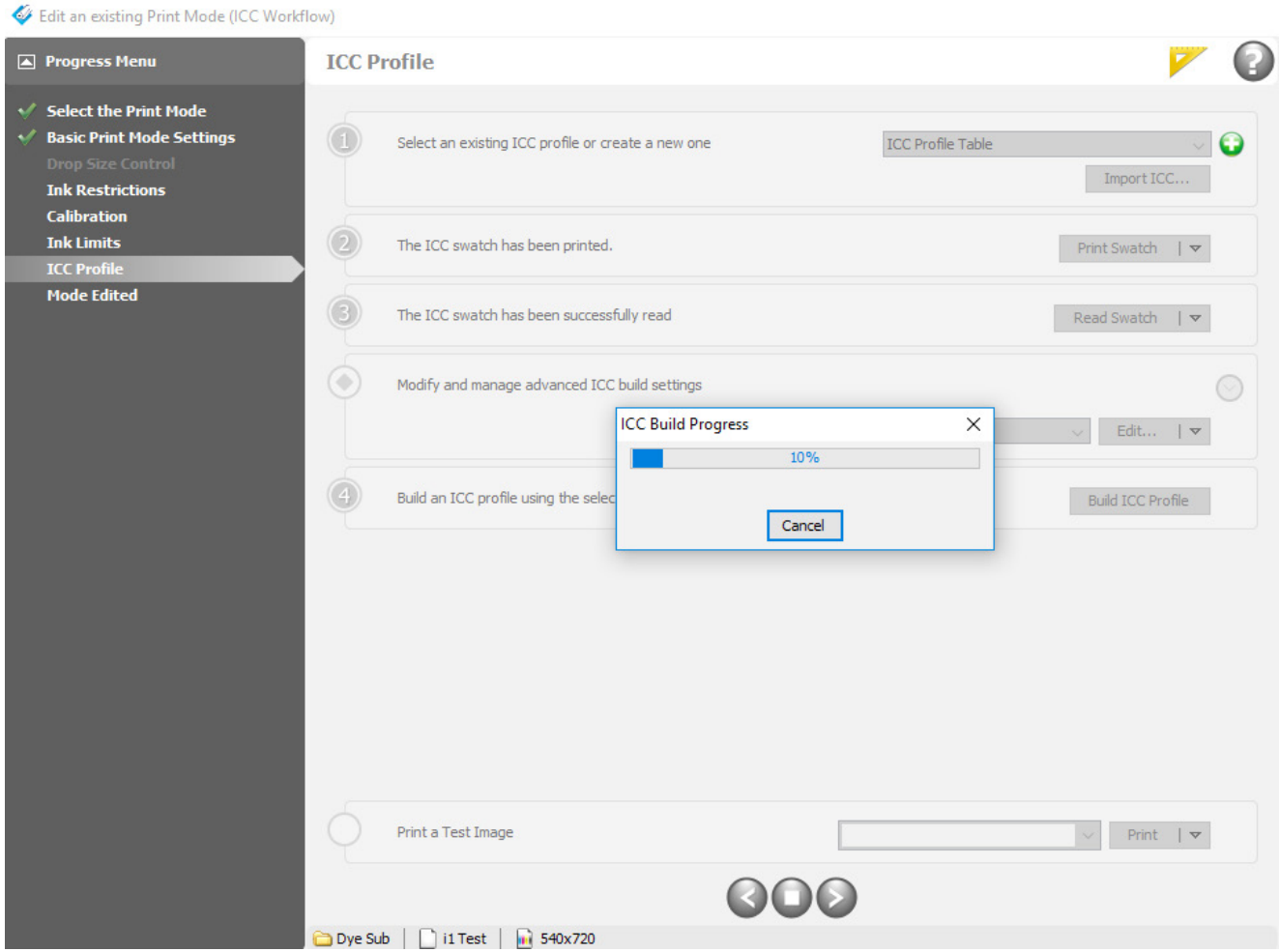
Navigate to the directory where you saved the Optimized Spectral data file.



Section VI: Import the Optimized Spectral Data into Media Manager (Continued)

STEP 3: Build the Profile.

Now Build the ICC Profile as you would normally.



Notes

Onyx ICC Data Converter converts files produced by Onyx and Thrive Media Manager (http://www.onyxgfx.com) to a format that can be used by programs that analyze, correct, and smooth CGATS formatted ICC profile measurement data. This program is required because Media Manager does not create a CGATS file with the data required for color data optimization.

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The CGATS file produced by Onyx Data Converter is intended for use with ColorAnt4 (https://colorlogic.de/en/colorant/) and with basICColor IMProve3 (https://www.basiccolor.de/basiccolor-improve-en/). These are licensed computer programs. ColorAnt is a product of ColorLogic GMBH, a German Corporation. BasICColor IMProve is a product of basICColor GMBH, a German Corporation.

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Onyx ICC Data Converter software is a product of Vistalogics. More information can be found at

http://www.vistalogics.com/Onyx_ICC_Data_Converter.html.