Document to Knowledge™
A CANON COMPANY

IRISPowerscan 11

Checkmarks

Revision History

Date	Description	Author
20171213	V1.0 – Creation	CB
20170115	V1.0 – Release	TW
20190828	V1.1 – Update for IPS11	TF

I.R.I.S. SA/NV
Rue du Bosquet 10
B-1348 Louvain-la-Neuve

P: +32 (0) 10 45 13 64
F: +32 (0) 10 45 34 43

www.irislink.com

CANON GROUP

Document to Knowledge™
A CANON COMPANY

Table of Contents

1. Introduction 3
2. How to design the form? 3
2.1 Sample form 3
2.2 Image quality 3
2.2.1 Resolution 3
2.2.2 Black and white Image 4
2.3 Correct positioning of extraction zones 4
2.4 First checkmark 5
2.5 Sample image 5
2.6 Thresholds 5
2.7 Clone the checkmarks 6
2.8 Apply the same settings to all checkmarks of the same group 7
2.9 Fine tuning 7
3. Legal Notice 8
3.1 Copyrights 8

I.R.I.S. SA/NV
Rue du Bosquet 10
B-1348 Louvain-la-Neuve

P: +32 (0) 10 45 13 64
F: +32 (0) 10 45 34 43

www.irislink.com

CANON GROUP

Document to Knowledge™
A CANON COMPANY

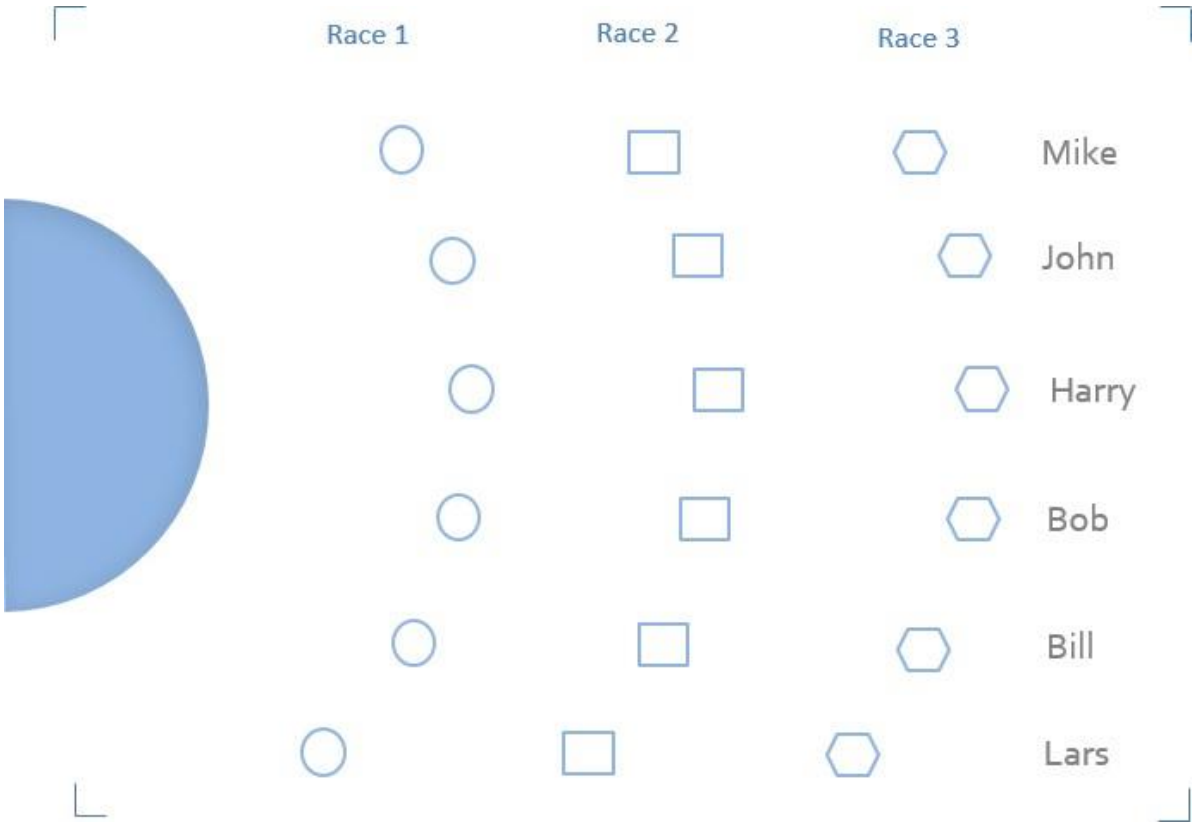
1. Introduction

This technical note summarizes the general good practices when using IRISPowerscan (IPS) to detect checkmarks. To illustrate this, we will work with a betting form having different types of checkmarks.

Please read carefully the user guide and how to guide regarding checkmark detection functionality as a pre-condition.

2. How to design the form?

2.1 Sample form



We have 6 competitors on 3 races. The form has been sent to many people who may want to bet on the winner.

2.2 Image quality

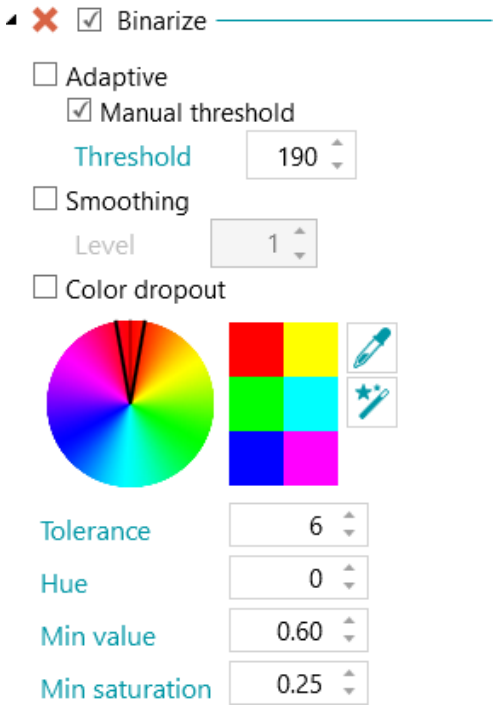
2.2.1 Resolution

It is advised to use images with **300 dpi** to have better shape outline.

2.2.2 Black and white Image

Checkmark detection is counting black and white pixels within an area. Therefore, if the source image is a color or grayscale image, we need a black and white image. If you do not define yourself a binarization image processing within IPS, the black and white pixels will be counted based on default parameters that are possibly not efficient for the document you will process.

We recommend to use a **binarize image processing** before detecting the checkmarks. Also, use a **fixed threshold** to better control the result. Usually, a high threshold increases the contrast.



2.3 Correct positioning of extraction zones



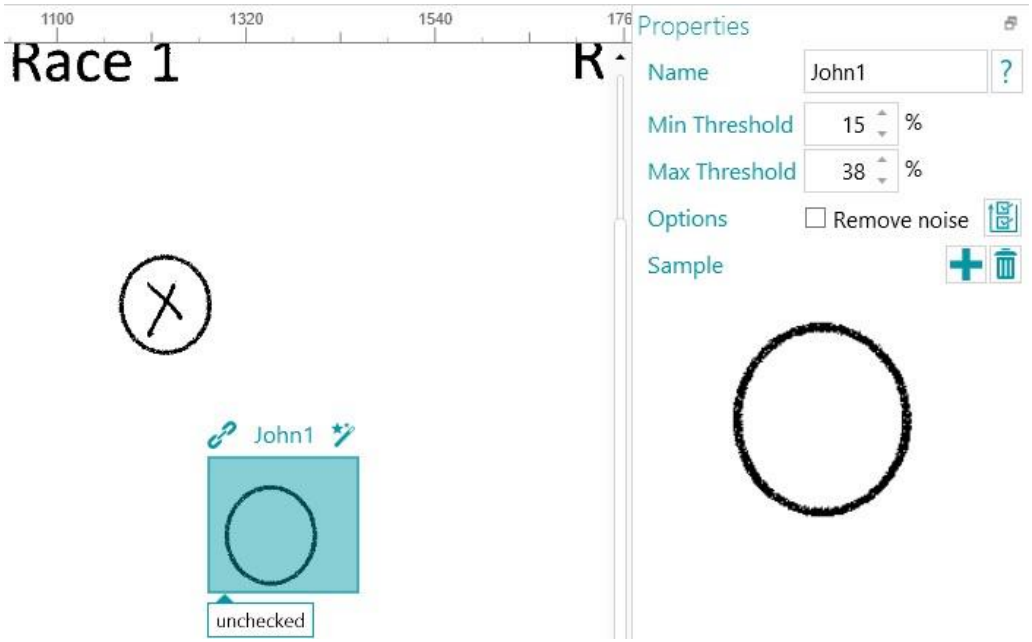
The data extraction zone you will draw to detect a checkmark will usually be small because there are other boxes nearby. The risk that it does not match the checkmark on a real production image exists because of image shift or small skew. To avoid this, it is recommended:

- To use **deskew** image processing.



- To create several **anchor points** to correct the possible image shifts.

2.4 First checkmark



2.5 Sample image

If the marks are assumed to be inside a well-defined bordered box, it is recommended to use a **sample image**. It is important to select an empty box. This sample will help the system to detect the black pixels inside the box.

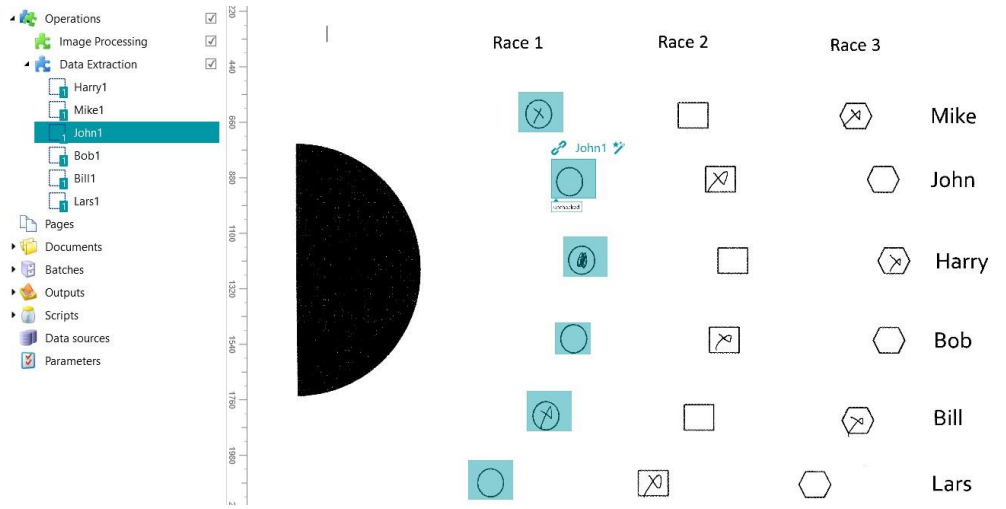
2.6 Thresholds

Identify the minimum and maximum thresholds defining whether the box will be unchecked, checked or cancelled.

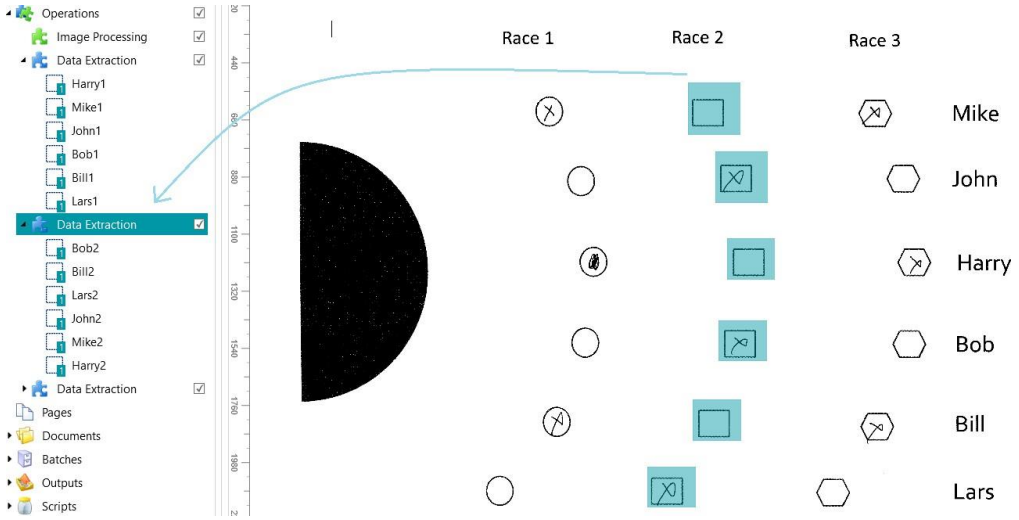
When you have defined your first extraction zone, you can move it on checked or cancelled marks to validate the properties.

2.7 Clone the checkmarks

Then, you can create the extraction areas for the other checkmarks with the same layout (**shape, size, border thickness, …**). Copy and Paste the first extraction zone is a good idea to keep the same settings for all the areas.



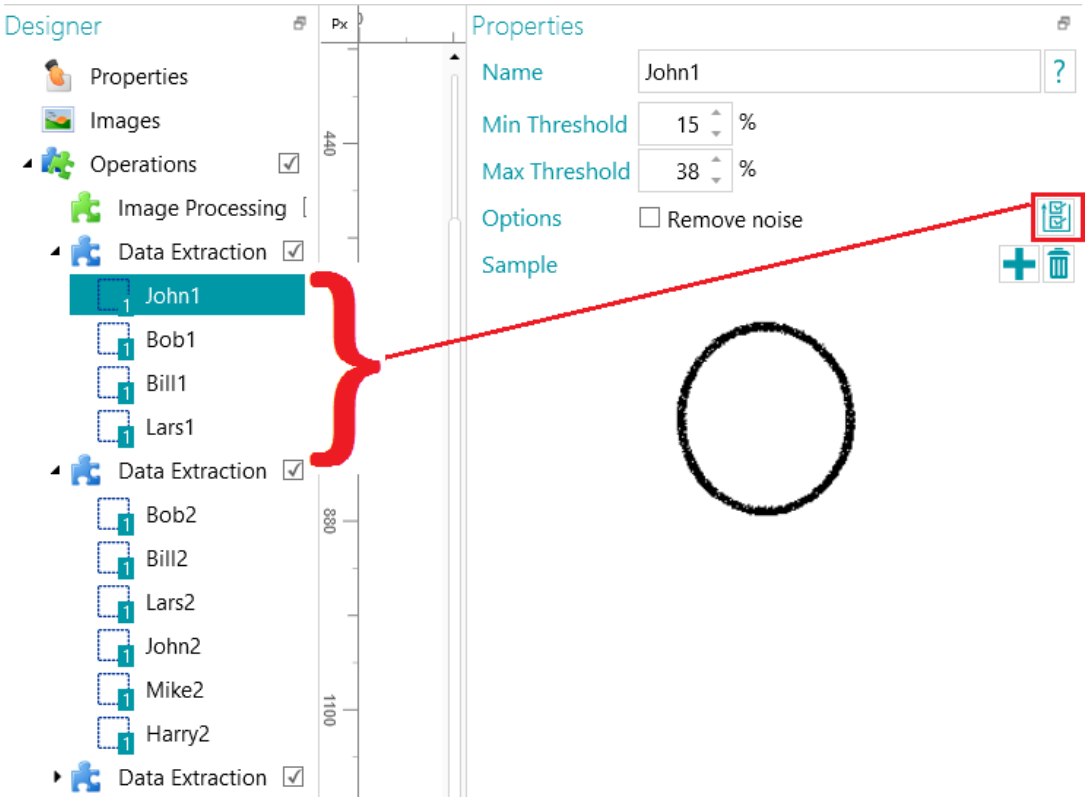
Repeat the same operation for the checkmarks having different shapes and group them inside different Data Extraction sections.



2.8 Apply the same settings to all checkmarks of the same group

Since IRISPowerscan 10.5.2, IRISPowerscan 11.0.0 and above there is a new easy way to change settings.

When you have updated the properties of the current checkmark, you can propagate them to all the other checkmarks within the same Data Extraction group with one click.



2.9 Fine tuning

When you have finalized the document design, you should validate it in a significant number of documents. Some adjustment could be needed in image processing and checkmarks properties.

Document to Knowledge™
A CANON COMPANY

3. Legal Notice

3.1 *Copyrights*

© 2019 I.R.I.S. All Rights Reserved.

I.R.I.S. SA/NV
Rue du Bosquet 10
B-1348 Louvain-la-Neuve

P: +32 (0) 10 45 13 64
F: +32 (0) 10 45 34 43

www.irislink.com

CANON GROUP