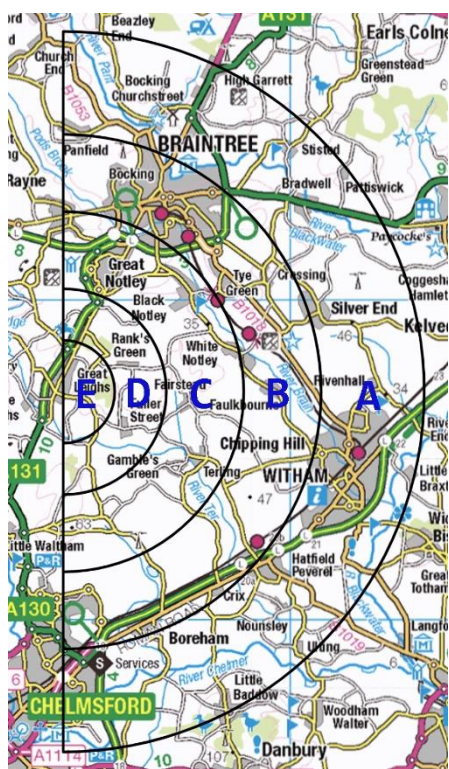# QRaken Navigational Scatter Format & App
Sunday, September 10th 2023

Locations

This map and semi-circles show the approximate search area for the QRaken Scatter. The rings have been assigned letters: A is the outer ring to E as the innermost ring. Very, very roughly there will be 16 locations to visit in ring A; 8 in ring B; 4 in C; 2 in D; and 2 in E – a total of 32. In line with Scatter rules, you will only have to visit 75% of these i.e. 24 locations to get a maximum score.

You don't have to copy this onto your map, it's just a guide to the approximate spacing of the locations.

At the start you will receive a sheet of 16 QR codes. These "S" codes will point to the locations of 16 hidden QR codes in ring A.

The 16 locations in ring A are designated A1, A2 … A16. They will be spread (roughly) evenly around the ring in anti-clockwise order. Hidden at each location there will be a tag containing a QR code. The "A" locations will be paired A1/A2, A3/A4 A5/A6 etc. The QR code clues at A1 and A2 will provide identical information to find location B1; A3/A4 to find B2 etc. Scanning the QR code with the supplied app will automatically display and store the encoded details for recall, and update the results table in the "cloud". For manual recording the details will be printed on the back of the QR code.

In ring B the locations are designated B1, B2 … B8. When you have found the pair A1 **or** A2, you will have the information for you to find the location of B1. A3 **or** A4 will lead you to B2 and so on to A15 **or** A16 giving B8.

The pattern continues for ring C with 4 locations. Pair B1 **and** B2 will lead you C1 … pair B7 **and** B8 will lead you to C4.

And for ring D: pair C1 **and** C2 will lead you to D1 and C3 **and** C4 to D2.

At the "D" and "E" locations you will need work a bit harder to gain access to the QR code. D1 will lead you to E1; D2 will lead you to E2.

You complete the event by scanning the "F" QR code or reporting to the "F" control at the finish venue.

The diagram below shows how the locations link together.
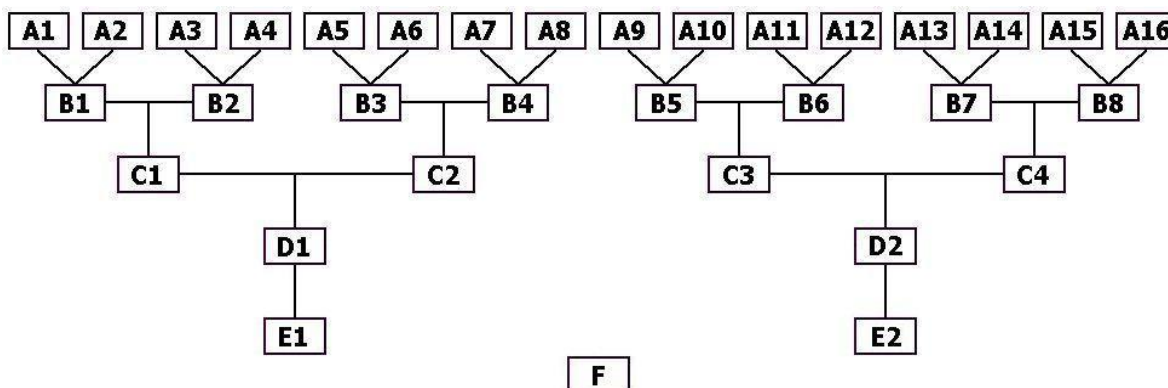
Every "A" code will score 1 point; "B" codes – 2 points; "C" codes – 4 points; "D" codes – 10 points; and "E" codes – 20 points. The maximum score you can achieve will be 100 points if you visit half of the "A" locations and all of "B", "C", "D", and "E" (8x1 + 8x2 + 4x4 + 2x10 + 2x20). If you exceed 100 points, by recording more than "A"s than necessary, your score will be capped at 100.

Your finish time will be recorded at the finish venue.

The following examples illustrate the Navigational Scatter principles using the Bullseye event that ran in 2021.

QR Codes

A QR Scanner feature is included in the suppled app for the event. QR codes can take many forms and colours, but we will be using simple black and white codes.

The first QR code is a typical start code. It says "*S1. -. A1. 570680,254699. Footpath sign*". So, S1 points to the A1 QR code at map reference 570680,254699 (TL 70680 54699) on a Footpath sign. The A1 QR code will point to location B1. Note: As A1 is paired with A2, A2 contains the same B1 information.

The second QR code is a typical 'B' location message. It says "*B1. GRAVE. C1(E). 567537,?. Back of Great …*" Found at B1 it gives you the first part (easting) of map reference of the QR code at C1, and the first part of the exact location. You need to visit location B2 to get the second half of the map reference and full location of C1.

If you are competing on the event in "traditional" or "analogue" mode, i.e. without scanning the QR codes, the QR information will be printed on the back of the QR code. In the B1 example, GRAVE is the word you need to write on your scorecard as proof of the finding the QR code.

Strategy

Obviously, you need to visit one of each pair of "A" locations in order to reach "B", "C", "D" and "E". However, if you can't find some of the QR codes your search in the next inner ring will be compromised. For example, if you can't find A1 or A2, you won't have location information to get you to B1, C1, D1, E1 and E2. If that happens, you'll have to supplement your score with some extra "A" locations.

The Scatter App

On the event if you are competing in "digital" mode, you will need a smart phone or a tablet with a 3G+ connection and camera, and optionally, a GPS facility. For scanning QR Codes and viewing the Codes' information the data requirements are low. If you intend to use the mapping and GPS facility your data requirements will be higher. Make sure your main mobile device is fully charged before the event, or bring along a spare battery, a battery power pack or a back-up device so that you have 5 hours of usage available. Switch off any apps not required.

If you are competing on the event in "traditional" or "analogue" mode, you will use your paper map for plotting and navigation and your scorecard for recording QR code information.

Before the event you are advised to try out the Demo at home to test your device and explore the Navigational Scatter App (NSA) features.

In the following instructions variations in the Demo are highlighted in brown/orange.
[You can run the Demo on a smart phone, laptop or desktop PC. You'll need a 3G+ or WiFi connection. A camera is optional.]

The NSA for the event can be accessed at https://b.ity.me.uk/QRA in your browser
[For the NSA demonstration version use https://b.ity.me.uk/DEM]

Note: The following browsers are known to support the NSA in Windows: Edge, Chrome, Firefox, Vivaldi, Brave and Opera. For Android use Chrome. For IoS (Apple) use Safari.

When you first access the NSA, enter the username and password provided in the Final Instructions for the event.
[When you first access the NSA Demo, at the Login window accept the username: NEWLOGIN and no password, but enter your Team Name. You will be assigned a username of the form DEM23xxx and a randomly generated 6-digit password. Make a note of these login details.]

Normally login details will be kept in your browser for automatic recall at a subsequent session. If you change your browser or device, you will need to re-enter your login details.

When you login for the first time, the NSA will detect how many cameras there are on your device. Select the camera you will use to scan the QR codes.
[In the Demo, if no cameras are detected (perhaps you are running on a "blind" PC) the information from the start-up QR Codes – see below – will automatically be loaded for you.]

You will then be shown a digital OS map centred on the start location.
On first time access the NSA will show a blue "F" marker – the finish location of the event.
[On first time access the NSA Demo will show an unmarked map.]
On subsequent map access the NSA will show red markers for QR Codes already found, and blue markers for those not yet found.
[On subsequent map access the NSA Demo will just show red markers for QR Codes already found.]
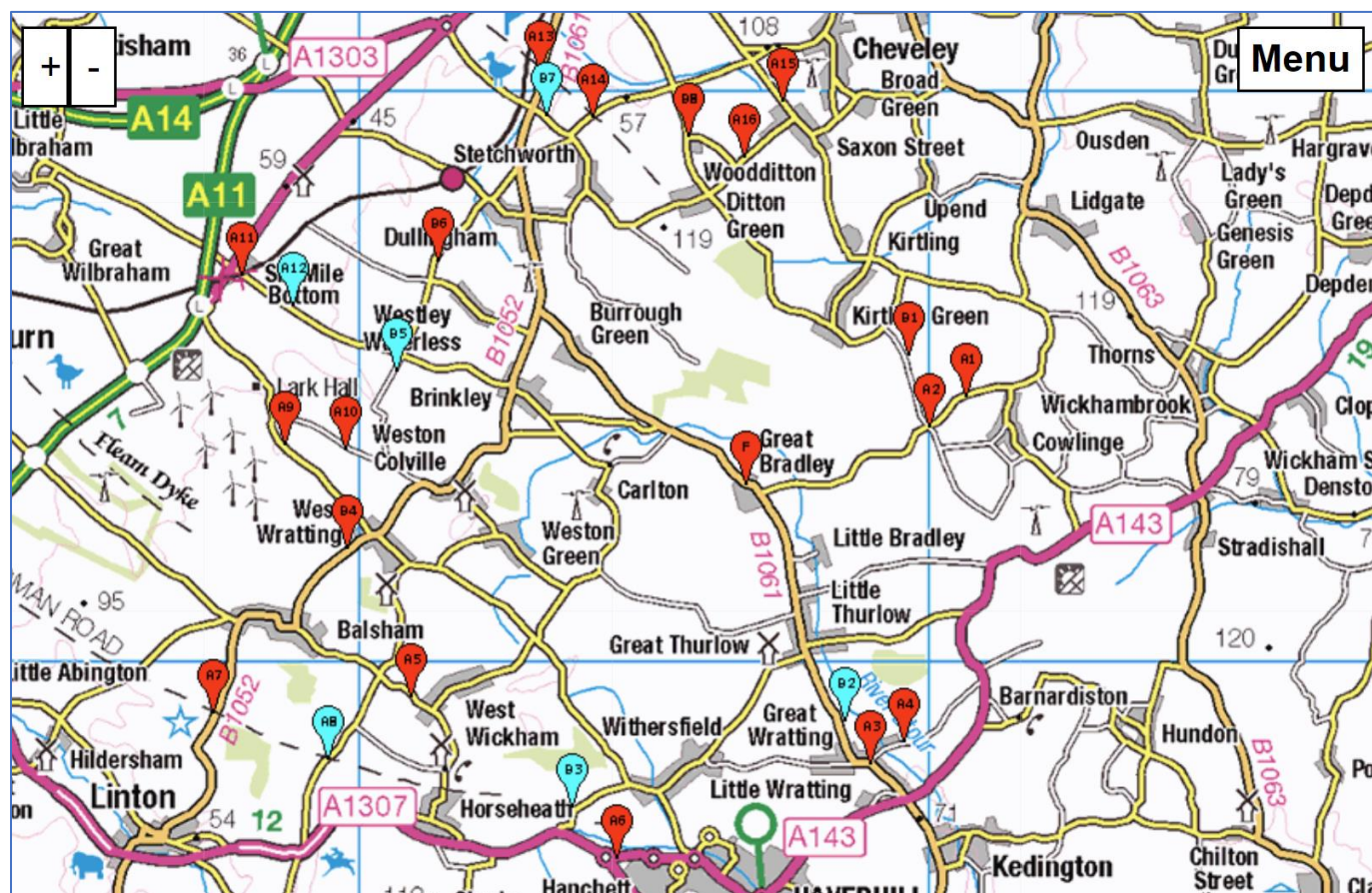
The map here shows the current information for live competitor QR03. QR Codes that have been found are tagged with a red marker. Those with a blue marker are known but not yet found. See also the Status table and Results table below.

Navigational Scatter Demo Menu for DEM23001

Print QR Codes

Scan

Status

Hide Map

Turn Geolocation On

Results

Reset

Help
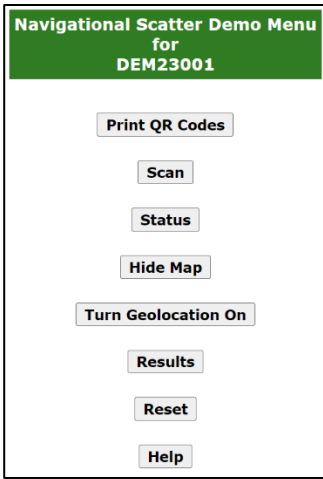
Choose **Menu** at the top right of the map to display a menu of options. You can also right-click on or touch the map to display the Menu. *Note: You can dismiss pop-up windows like the Options Menu by right-clicking in the window or on a mobile device with a 2-finger touch.*

At the event start time (12:00) you will receive a printed sheet of QR codes (numbered S1-S16) which when scanned using the NSA **Scan** option will reveal the location of hidden QR codes at locations A1-A16. Hold the code steady in front of the scanning window. After each scan a window will pop up showing the map reference and exact location of the "A" codes. You don't have to write this information down; it will be stored on your device and the markers will be shown on your map. When you've scanned all 16 QR codes, choose the **Status** option. A list of scanned information will be displayed.

[In the NSA Demo, if you don't have a camera, the A1-A16 codes will already be available in the **Status** option. Otherwise choose **Print QR Codes**, cut out the 16 codes, and **Scan** all of them as above. *Note: You may need to print from a PC if your mobile device doesn't have access to a printer.*]

The partial Status table here relates to live competitor QR03. QR Codes in green have been found. Where the information for a QR Code is known but not yet found the entries are in orange. The "C" codes here are in red because only half the information regarding their locations has been discovered. For example, the easting reference for C1 was obtained by finding the "B1" Code. Both the "D" Codes are blank because they require "C1" and "C2", and "C3" and "C4" to be found.

As a Real competitor you now have a choice:
1) You can transfer all the scanned information to your paper OS map, plan your route, and travel to the A1-A16 locations. You should choose **Hide Map** to prevent your device from constant updating.
or
2) You will see all the "A" locations on the map designated with a tagged blue marker. If you want to be reminded of the information at each marker, touch/click the marker on the screen (a window will pop up) or revisit the **Status** option.

Code	Reference	Description
A15	567455 259877	Footpath sign
A16	566793 258879	Near hinge at footpath gateway
B1	569668 255403	Footpath sign (east side)
B2	568556 249004	'Bridge' across stream
B3	563779 247492	Back of chevron sign
B4	559831 252031	Wooden Post
B5	560675 255143	Woodland Cemetery archway
B6	561418 257072	Telegraph pole
B7	563320 259607	Post right of gate
B8	565813 259245	Bridleway sign
C1	567537 0	Back of Great ...
C2	0 249243	... round post
C3	0 253465	... at triangle
C4	0 257747	... sign
D1		
D2		

Optionally choose the **Turn Geolocation ON** option and a pulsing blue dot will show your current location on the map. Use the map and the moving blue dot to travel to the A1-A16 locations. Use the **+** and **-** buttons at the top left of the map to zoom-in (greater detail) and zoom-out (less detail).

[As a Demo competitor you'll have the "A" locations in your **Status** table, but they won't be marked on the map. You now have to click/touch on the map where you think an "A" code is located. Use the **+** and **-** buttons at the top left of the map to zoom-in (greater detail) and zoom-out (less detail). A small window will pop-up for a few seconds stating your nearest QR Code and your map distance from it (at the start this will comprise the "A" codes and "F"). A pulsing blue dot will show where you clicked (your virtual "Geolocation").
If you've clicked within 50 map metres of a code, a pop-up window will show the QR code that you've found (just for information, you don't need to scan it) and the information within the code. A red marker will appear on the map to register a find; and the Status table and Results tables will be automatically updated.]

Each "A" location will have a QR code containing information of where you can find the next "B" location.

Each "B" location will have a QR code containing **half** the information you need for the next "C" location. The paired "B" location will contain the other half.

Each "C" location will have a QR code containing **half** the information you need for the next "D" location. The paired "C" location will contain the other half.

Each "D" location will have a QR code and the **full** information you need for the corresponding "E" location. However, you will need to open a container to a get access to the QR code. You may need to walk a short way to reach the container.

Each "E" location will have a QR code. However, you will need to open a container to a get access to the QR code. You may need to walk a short way to reach the container.

At each search location, when you have found the QR Code use the **Scan** option, check your **Status**, and plan the route to your next location via your paper map or digital map.

When you scan a QR code or change your location the information will be stored locally and in the "cloud". If you don't have a 3G+ signal at a particular location, any updating information will be retained until you do have a signal.

To be registered as a (penalty-free) finisher you must scan the "F" QR Code at the finish venue before 17:00. For every minute late you will lose 5 points.
[To finish as a Demo competitor click/touch the "F" marker within 50 map metres. You can do this at any time without having found the preceding QR Codes.]

At any time you can choose the **Results > Detail** or **Results > Summary** option. This will show the current score of each competitor on the event.

QRaken NS Results

UserId	Team Name	A																B								C				D		E		F	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	6	7	8	1	2	3	4	1	2	1	2		
QR04	Team Orange	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	100
QR06	Team Pear	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	100
QR07	Team Grape	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-10	70
QR08	Team Raspberry	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	0	60
QR05	Team Apple	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	X	X	-	-	X	-	X	-	0	54
QR09	Team Lemon	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0	50
QR10	Team Apricot	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	0	40
QR11	Team Prune	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	0	36
QR12	Team Fig	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	0	32
QR03	Team Plum	X	X	X	X	X	X	X	-	X	X	X	-	X	X	X	X	X	-	X	-	X	-	X	-	X	-	X	-	-	-	-	-	0	22
QR01	Team Banana	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	0	20
QR02	Team Strawberry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	16

This table shows the detail results at the finish of the event. Xs show QR Codes found. Team Orange found every Code but their 108 points was capped at 100. Team Pear did the minimum necessary (found 75% of the Codes) and still scored 100 points. Team Grape scored 80 points but lost 10 points (column F) because they arrived at the finish almost 2 minutes late (-5 points/minute). Team Apple completed just "one side" of the event: A1-8, B1-4, C1-2, D1 and D2.

QRaken NS Results

UserId	Team Name	Score	D:H:M:S
QR04	Team Orange	100	0:04:58:20
QR06	Team Pear	100	0:05:00:00
QR07	Team Grape	70	0:05:01:40
QR08	Team Raspberry	60	0:05:00:00
QR05	Team Apple	54	0:05:00:00
QR09	Team Lemon	50	0:05:00:00
QR10	Team Apricot	40	0:05:00:00
QR11	Team Prune	36	0:05:00:00
QR12	Team Fig	32	0:05:00:00
QR03	Team Plum	22	0:05:00:00
QR01	Team Banana	20	0:05:00:00
QR02	Team Strawberry	16	0:05:00:00

Looking at the summary table shows how long each competitor took from the start (12:00) to scanning the "F" Code at the finish (**D**ays,**H**ours,**M**inutes,**S**econds). Although Team Orange was quicker than Team Pear there is no merit attributed to speed, so there was a tie for first place, BUT since the Team Orange had only one passenger to Team Pear's two, Team Orange was declared the winner.
[In the Demo, points ties are resolved in favour of the competitor taking the least time.]