We have designed various types of QR Codes in order to make them recognizable.

We will use the one on the top left, its border are easily recognizable, the code is also written on the 4 sides in case the QR code was not working with the scan. In addition we have kept it in black and white to reduce printing costs.

The QR Codes are an essential part of the vaccine tracking system. As per the proposition, they are designed by Voxmapp but produced by a third party. Ideally this third party would be a printing company situated in Afghanistan.

The QR Codes will be used to differentiate each vaccine box. The QR Codes could also be used to track the syringes associated to each vaccine box (one syringe per dose). An alternative a simpler solution would be to just answer a question associated to the QR Codes of the vaccine: "Are there sufficient syringes associated to this vaccine doses?"

In our model we have considered that an hospital will never receive less then 10 vials of vaccine. And it will more often receive a box of 50 vials of vaccine.

If you are planning to vaccine 23 million persons with 2 shots, we will need 46 million doses. Each vials contains 5 doses (but this might vary according to the vaccine brand). In consequence **we will need over 2 million QR codes** (46 000 000 / 5 / 10 = 920 000 plus the intermediary boxes) corresponding to the number of boxes that will be in circulation for the whole campaign.

If we make the calculation using QR Codes only for the vaccines,

The specificities of the QR Code:

- Very resistant sticker (if should be difficult to remove it once it is sticked to the box)
- The ink should not fade away
- The minimal size is 3,5 cm by 3,5 cm for readability
- The QR Code should be easy to detach from the QR Code sheet (pre-cut elements should be present on the back of the QR code)
- The QR Codes should be presented in A4 sheets (see the example show here =>)

In the next page we are providing a possible option to protect the QR code further, it will require an additional manipulation at the warehouse but this might help a lot to avoid accidents during later box manipulations.

23 mm   36,54mm
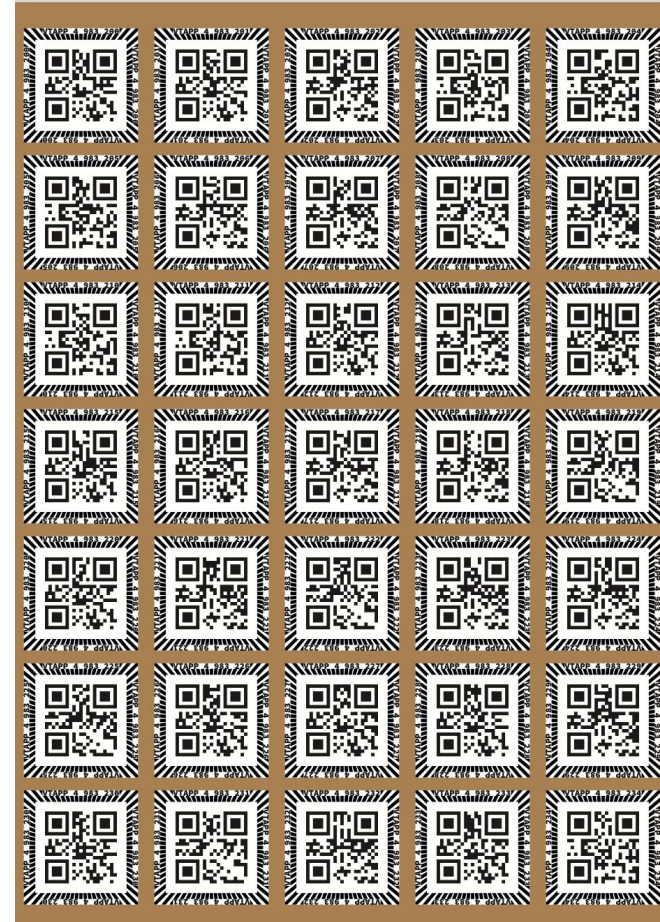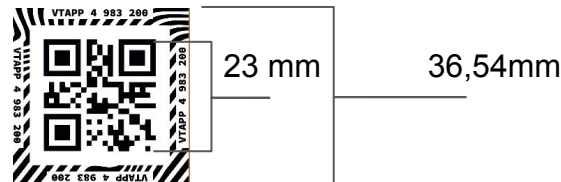
Once the QR code in sticked on the box, a very transparent rubber tape is placed over each QR codes

(We must test the QR Code readability with this system)

We are planning the following tests
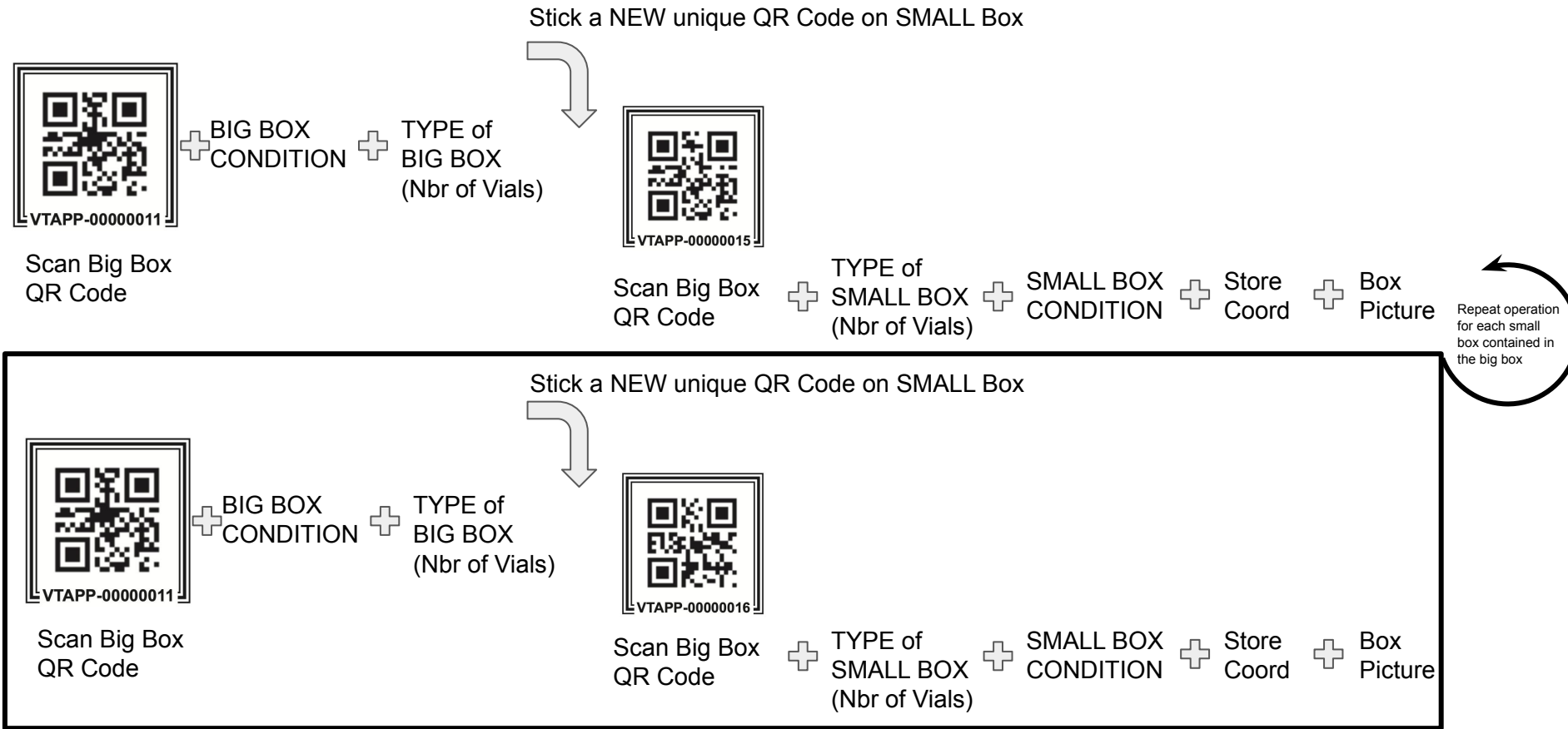
Now: QR Code readability
Next week: Process test with warehouse inputs + test QR code sample qualities
In 7 days: Final selection of the QR Code system and launch of the printing process large scale

All the QR Codes with the final rendering should be available to be used in 20 days (week 5).

Action: REPACKING

Metadata collected: USER ID + GPS + TIME ACTION + FILE Detail

Stick a NEW unique QR Code on SMALL Box

VTAPP-00000011

Scan Big Box QR Code

➕ BIG BOX CONDITION

➕ TYPE of BIG BOX (Nbr of Vials)

VTAPP-00000015

Scan Big Box QR Code

➕ TYPE of SMALL BOX (Nbr of Vials)

➕ SMALL BOX CONDITION

➕ Store Coord

➕ Box Picture

Repeat operation for each small box contained in the big box

Stick a NEW unique QR Code on SMALL Box

VTAPP-00000011

Scan Big Box QR Code

➕ BIG BOX CONDITION

➕ TYPE of BIG BOX (Nbr of Vials)

VTAPP-00000016

Scan Big Box QR Code

➕ TYPE of SMALL BOX (Nbr of Vials)

➕ SMALL BOX CONDITION

➕ Store Coord

➕ Box Picture

Different packing option exist and should be discussed, especially with regard to the syringe and the vaccine certificate provision in parallel with the vaccine distribution.

We think the simplest manner is to ask at each point of the supply chain a confirmation the the vaccine doses are paired with the right number of blank certificates and the right amounts of syringes.

Tracking both the syringes packets and the syringes using separate QR codes is possible but it will require as many logistic efforts as the one invested in the vaccines tracking.

If we want to launch the system, in 3 weeks, we need to have the printed QR codes ready for that date.

On the side of Voxmapp, we have a sample A4 QR code page and we can provide the 2 million different QR Codes presented on a A4 format whenever requested by the printer.

Before the printing is launched, we must ensure the quality is adapted and the above specification respected.

The provision of the QR Codes will certainly have to follow UNDP's procurement process.

All the QR Codes with the final rendering should be available to be used in 20 days (week 5).