

## Scheduling for DV-2022

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## 1 Introduction

Scheduling is divided into two parts. First the AV-Queue is filled, then the AV-Queue is emptied. Cases that leave the AV-Queue receive their interview appointment and are scheduled. Thanks to the Consular Electronic Application Center (CEAC) and Xarhtisius, we have the final result of all cases being scheduled. The question is, how exactly is the AV-Queue filled and how exactly is the AV-Queue emptied. A common pattern in scheduling was observed in DV-2022. First, the cases were scheduled sparingly in random order under the current cutoff line. Then they were scheduled in Case Number (CN) order. After that the CN-Order was violated and the cases were scheduled by AV-Transition date first and in CN-Order within AV-Transition date second. Finally the scheduling returned to CN-Order. It turns out all embassies follow this pattern, but in some cases, like Algiers, it's more disguised than others. In (Figure 2) the moment the transition from CN-Order to CN-Order within AV-Transition date is shown. From here on out, we will call this phase "FIFO-Regime". For a single region, we have therefore four phases. Random Fill, CN-Order, FIFO-Regime, CN-Order.

The apparently arbitrary way of scheduling was caused by the way KCC schedules cases in general and two decisions that were made specifically during the DV-2022 program year. First the Kentucky Consular Center (KCC), switched from starting processing the DS-260 in First-In-First-Out (FIFO) order to processing them in CN-Order at the end of December [1, p.17]. Second between January 7. and February 8.<sup>1</sup> the decision was made to increase the Visa Bulletin (VB) by over 100%. Those two decisions in conjunction caused the weird behavior in scheduling as shown below.

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<sup>1</sup>As Brit Simon points out the Visa Bulletin Dates given on the official site are not the date, they become public. Comparing the two dates, show that the official release is always earlier. Mostly by one week. They might release it for a secluded group first, before making it public. Apart from any speculation, we haven't found any violation in either direction and stay therefore with the official release.

## 2 Scheduling in 2018

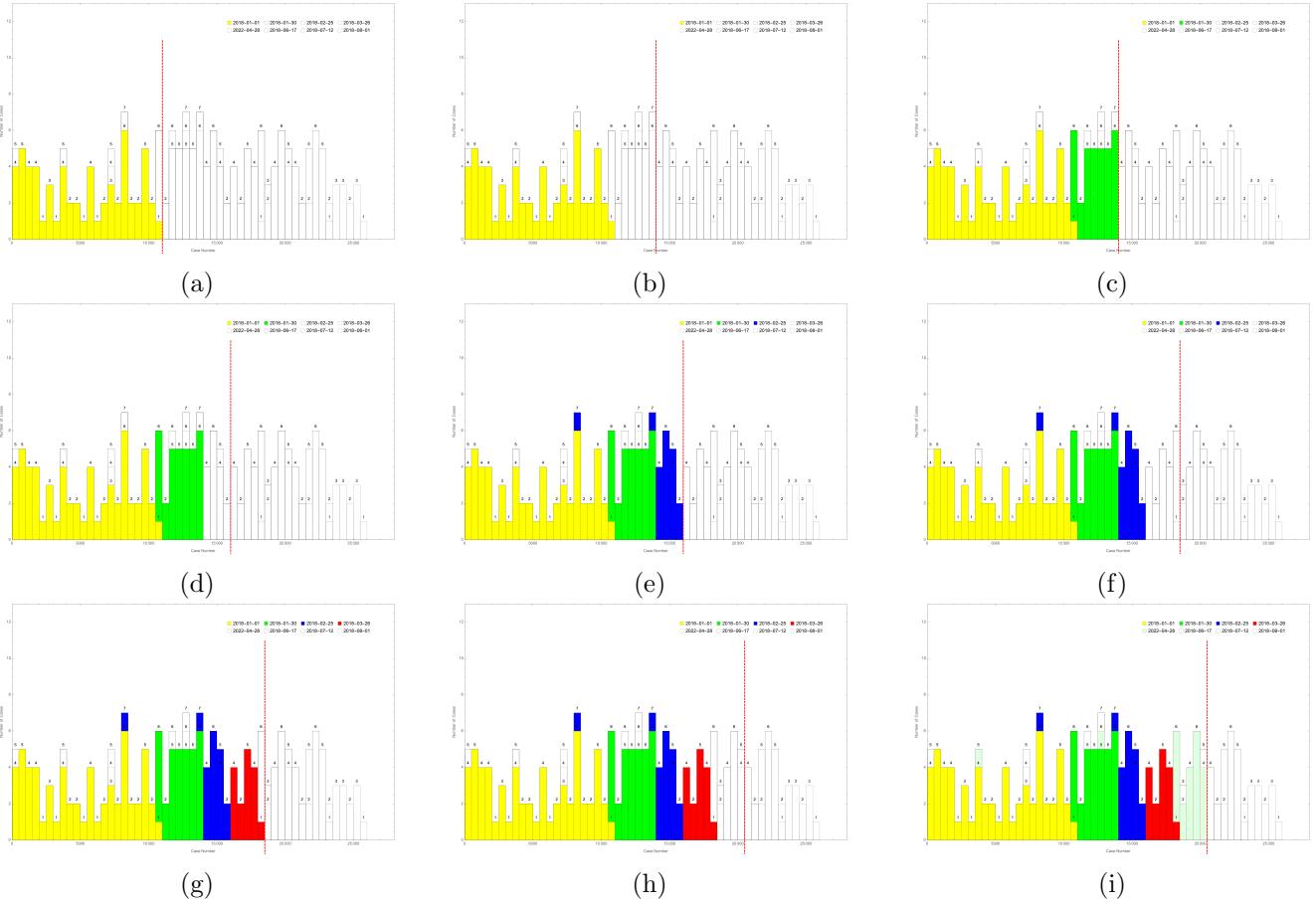


Figure 1: Frankfurt in 2018, as an example of VB driven scheduling.

Let's briefly discuss how scheduling was done in 2018 pars pro toto for good scheduling. In a good functioning year, like 2018, the Visa Bulletin controls scheduling. Starting around July, the Kentucky Consular Center (KCC) starts processing DS-260s in FIFO order. We point out, that starting the DS-260 processing in FIFO order doesn't mean it finishes in that order, but cases of similar complexity will finish in a comparable time. As the DS-260s were front loaded by at least three month, enough DS-260s were processed to fill the posts with cases. The new document procedure insured a CN-Order of DS-260 finishing, however the cutoff line was the primary factor to ensure case number processing. The VB was increased in reasonable amounts, for the EU region the increments were in the range of [1425, 3100] for example, and the cases under the VB got scheduled.

In (Figure 1) you can see part of the monthly scheduling procedure for Frankfurt. Starting from January 2018 when CEAC became available. In the following months the VB was increased and the cases under the cutoff line were scheduled. This procedure was repeated each month. Ideally the VB is increased in such a way, that all cases under the cutoff are scheduled before the VB increases. We note that the cases always touch the cutoff line. Apart of the Document Procedure, these cases are scheduled in random order<sup>2</sup> under the cutoff line. The Document Procedure formed a substructure, that is not visible in the histograms.

---

<sup>2</sup>We will specify random in (Chapter 5)

Finally we note that later cases that finished processing later were scheduled in one of the following months. Blue cases if (Figure 1e) for example. Having a low case number was an advantage in two ways. The lower a case number was, the earlier it became eligible to be scheduled and had, if capacity ever played a role, multiple opportunities to be scheduled.

### 3 DV-2022 Examples

We will start with a few examples of each region and - en passant - explain what happened. All examples follow the same principles. The AV-Queue is build up and then it is emptied. It's the scale and different regimes that vary for different embassies and can lead to vastly different results as we'll see.

Building up the AV-Queue is done by following a few simple rules. When the AV-Queue is emptied we only see the end result in one batch. The AV-Queue described has to explain what we see in the final result. One thing to keep in mind, is the resolution of the final result, which is the batch taken by the given embassy. It is not fine enough, to show the exact order of the AV-Queue. It's like an Airport shuttle bus. Security lines up the people one-by-one but once the bus arrives they run like possessed for the bus<sup>3</sup> to enter it. We only see, who is coming out of the bus and have to decide based on the rules for the AV-Queue, in which order the AV-Queue was. On an airport, mothers with children might get put in front of the queue by security. Therefore if five mothers with their children leave the bus, we can tell these people were in front of the queue, regardless if they leave the bus in a different order.

As we'll see the Histogram is not necessarily filled left to right. Many times the AV-Queue had the higher cases in front of the lower cases for reasons we will explain.

#### 3.1 Examples Europe

##### 3.1.1 Warsaw - Poland

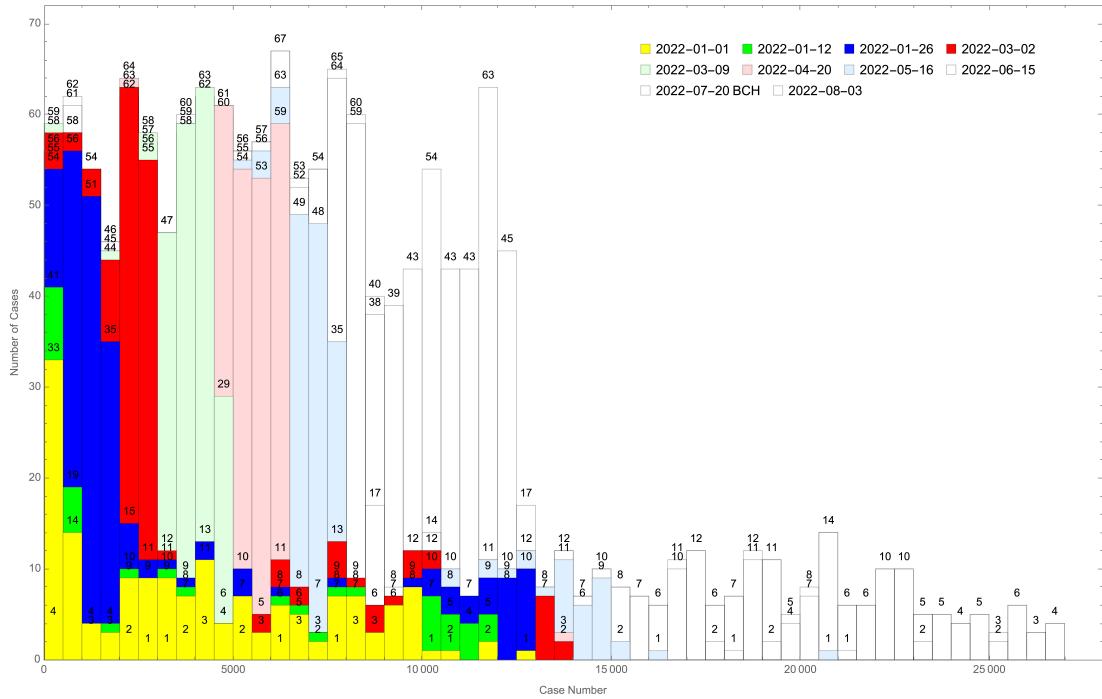


Figure 2: The FIFO-Regime starting in Warsaw on May 16.

<sup>3</sup>That's despite the fact everybody having a designated seat.

Release Date	VB Name	Valid for:	EU-cutoff
September 7, 2021	October, 2021	November, 2021	5300
	November, 2021	December, 2021	7300
November 8, 2021	December, 2021	January, 2022	10000
December 8, 2021	January, 2022	February, 2022	13000
January 7, 2022	February, 2022	March, 2022	13500
February 8, 2022	March, 2022	April, 2022	27000
March 10, 2022	April, 2022	May, 2022	27000
April 7, 2022	May, 2022	June, 2022	Current
May 6, 2022	June, 2022	July, 2022	Current
June 6, 2022	July, 2022	August, 2022	Current
July 1, 2022	August, 2022	September, 2022	Current

Table 1: Visa Bulletin for DV-2022 EU

Like already said, scheduling is basically done in two parts. Filling the AV-Queue and later emptying it. Let's first discuss the filling part.

After the late start in October, KCC started processing DS-260 like in previous years in FIFO order. Regardless of the CN the DS-260 started processing. Because the cutoff line (Table 1) for the EU was only up to 13500, only cases that finished processing and were under that cutoff could be added to the AV-Queue. All the cases that started processing in FIFO order and had a higher CN-Number were not eligible to be added to the AV-Queue yet, and were waiting to become eligible. Processing these cases at that time was pointless and lead to a situation where KCC hadn't processed enough DS-260s to fill the spots given to them by the embassies. Therefore the decision was made to drop the document procedure and two weeks later to start processing the DS-260s in CN-Order. Until that time in late December<sup>4</sup> cases that were added to the AV-Queue were only limited by the cutoff line. Dropping the Document Procedure, allowed KCC to process the DS-260s faster. In the following month up to February 8. KCC continued processing DS-260s in CN-Order and added them to the AV-Queue. On February 8. the VB for April was released and increased by 100% from 13500 to 27000 (Table 1). All the cases that finished processing in the time from October-January became now eligible to be added to the AV-Queue. On or shortly after February 8. all of these cases entered the AV-Queue at once<sup>5</sup>. From now on KCC continued processing DS-260s in CN-Order and added them to the AV-Queue. The AV-Queue looked as follows:

$$\begin{aligned}
 & | \text{CNs up to cutoff (bef. Jan)} | \text{FIFO CN} < 13500 \& \text{CN-Order (bef. Jan)} | & (1) \\
 & | \text{CN-Order (Jan-Feb)} | \text{FIFO cases} < 27000 | \text{CN-Order (after Feb)} |
 \end{aligned}$$

---

<sup>4</sup>We will often say January. Two weeks after December 9. is around Christmas, so it's reasonable to assume, not much was done until the start of the new year.

<sup>5</sup>That's not entirely correct and will be discussed later in (Chapter 5). The approximation of only one transition date is sufficient at the moment

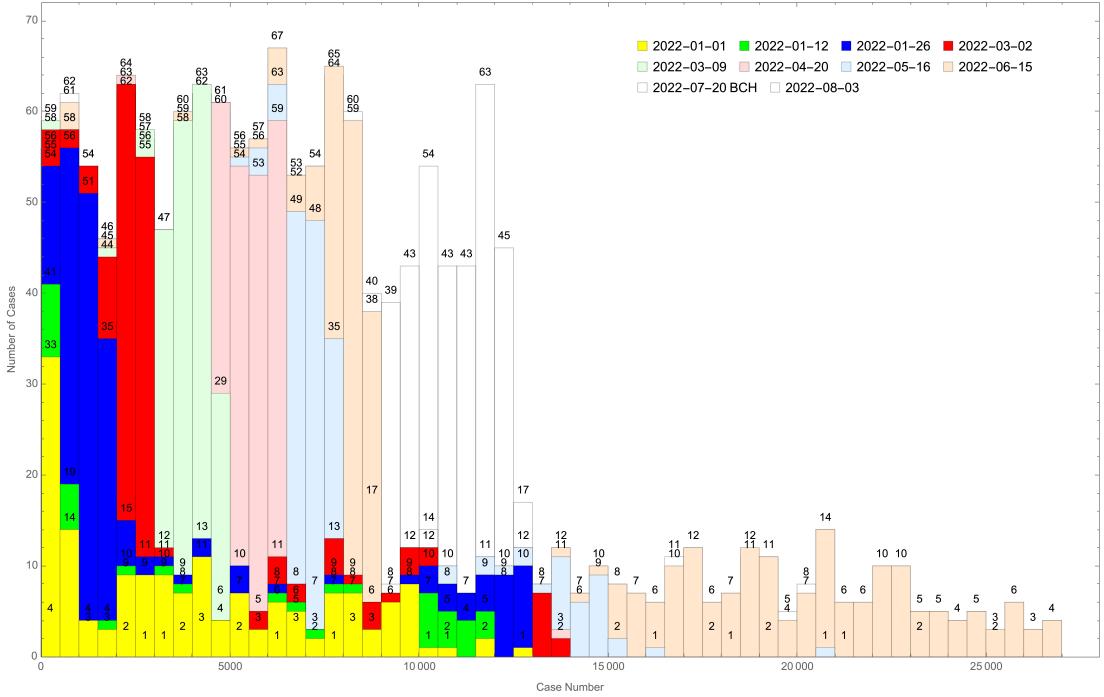


Figure 3: FIFO-Regime ending in Warsaw on June 16.

Now let's come to the second part and see how it played out. As seen in (Figure 2) Up until January 1. cases were scheduled up to the cutoff line of 13500. The cutoff actually changed during that time, but the CEAC data is not available. In late January, we arrived at the AV-Queue part with mixed FIFO cases below the cutoff of 13500 and CN-Order cases. The blue and red peaks were clear indications of the change even at the time. After March 2. the point in the AV-Queue was reached were the CN-Ordered cases, which finished processing between January and February were reached. Note, that the peaks are in CN-Order without ever touching any cutoff line. Which provides positive proof, KCC indeed changed to processing the DS-260 in CN-Order. Otherwise we would see a random fill up to the cutoff line like in (Figure 1). On May 16 the transition from CN-Order cases to the FIFO cases was reached. The big light blue peak on the left are still cases processed between January-February and the first light blue cases after 13500 are the first FIFO cases. The FIFO cases should be in CN-Order within the same transition date. Therefore the two blue isolated cases on the right can't be part of them and indeed the two cases 2022EU16018 and 2022EU20633, transferred from Vilnius and Israel respectively. As seen in (Figure 3) the following month on June 15. the last FIFO cases were scheduled, the light orange<sup>6</sup> cases, and the part of the AV-Queue with cases in CN-Order processed after February 8. was reached. The cases wrap around of the whole range of 27000 and return to the CN-Order at about 7500. We want to stress again, the light orange cases on the right were in the AV-Queue before the light orange cases forming the big peak on the left. In the following month cases kept being scheduled in CN-Order. The cases scheduled on July 20. were transferred to Bucharest but they came from the AV-Queue for Warsaw and on August 3. the last cases for Warsaw were scheduled (Figure 4).

<sup>6</sup>Yes, that's light orange.

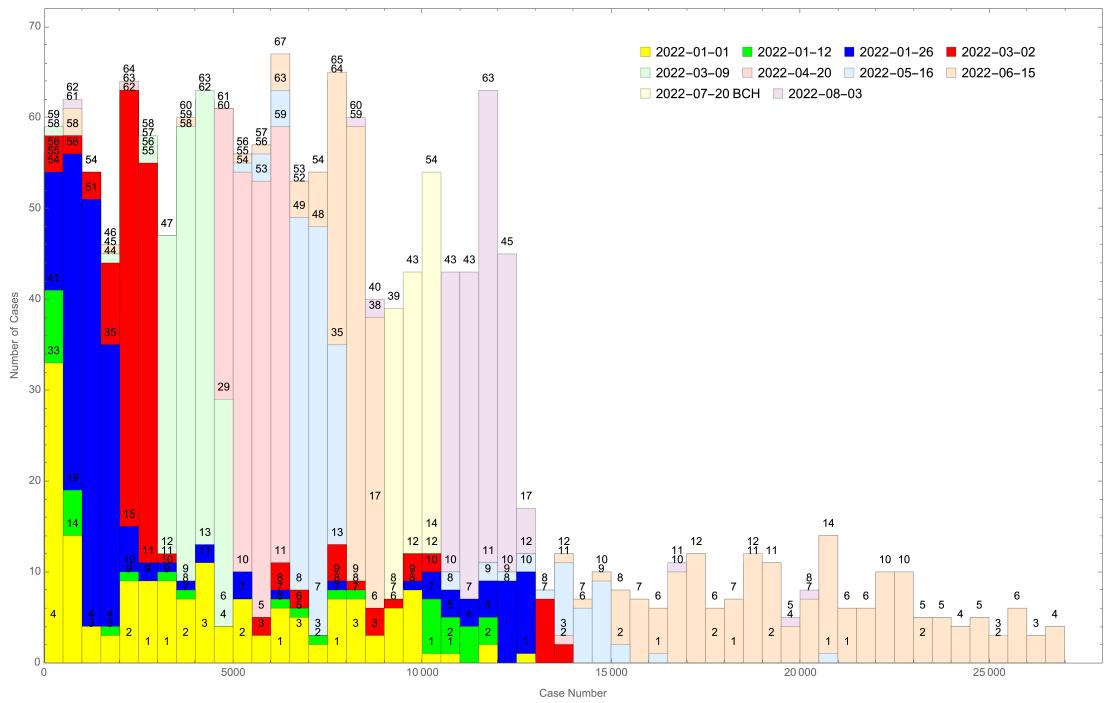


Figure 4: Warsaw fully scheduled.

The amount of cases in the FIFO regime for Warsaw was around 206 cases.

### 3.1.2 Frankfurt - Germany

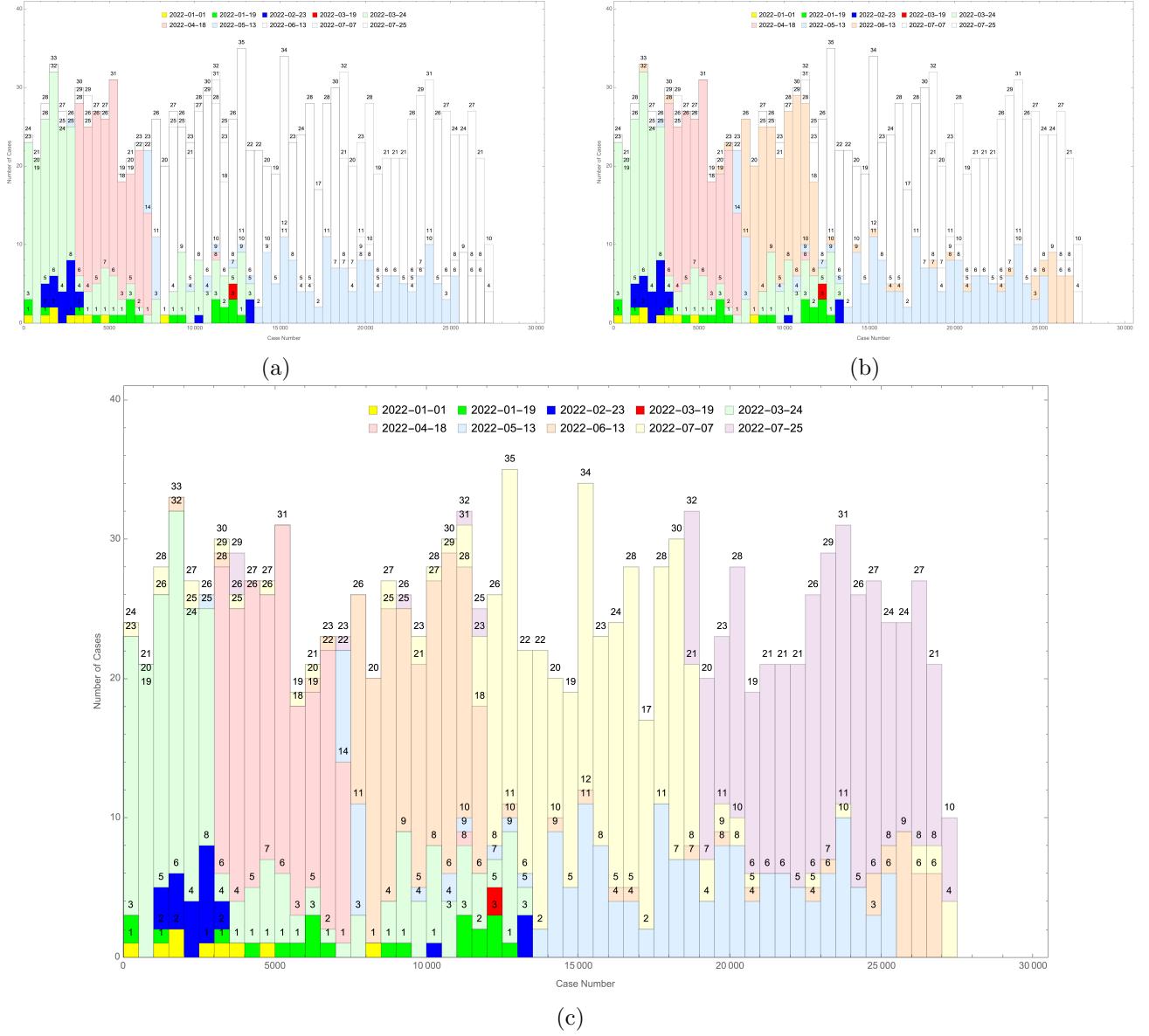


Figure 5: Scheduling for Frankfurt showing the beginning of the FIFO regime (5a), the ending of the FIFO regime (5b) and Frankfurt finished scheduling (5c).

The same process as in Warsaw happened in Frankfurt (Figure 5a) and Tashkent, not shown, at different times. The reason for the different times should be clear by now. The timing depends on how many cases were added to the AV-Queue between January and February, and how much capacity the embassy had to empty the AV-Queue. Looking back to 2018 (Figure 1) the AV-Queue was filled and emptied soon afterwards. There was no delay. The increase in processing speed of DS-260s caused the AV-Queue to grow faster than cases could be scheduled. Therefore the delay happened.

The FIFO cases were reached in Frankfurt on May 13 (Figure 5a) and finished the following month on June 13. (Figure 5b). In total there were 189 cases in FIFO order added. Unlike Warsaw, Frankfurt finished it's AV-Queue. As you can see later cases go on top of the FIFO-Regime and fill the whole range of the spectrum

up to the cutoff line (Figure 5c). The same in smaller peaks would've happened in Warsaw if they were able to finish their AV-Queue.

The keen observer might notice the 12 cases on top of the light blue cases forming The FIFO-Regime (Figure 5b). If all FIFO cases transitioned at once to the AV-Queue, these 12 cases shouldn't be there. There is a technical explanation for them, that we will discuss in chapter (Chapter 5).

## 3.2 Examples Africa

### 3.2.1 Algiers - Algeria

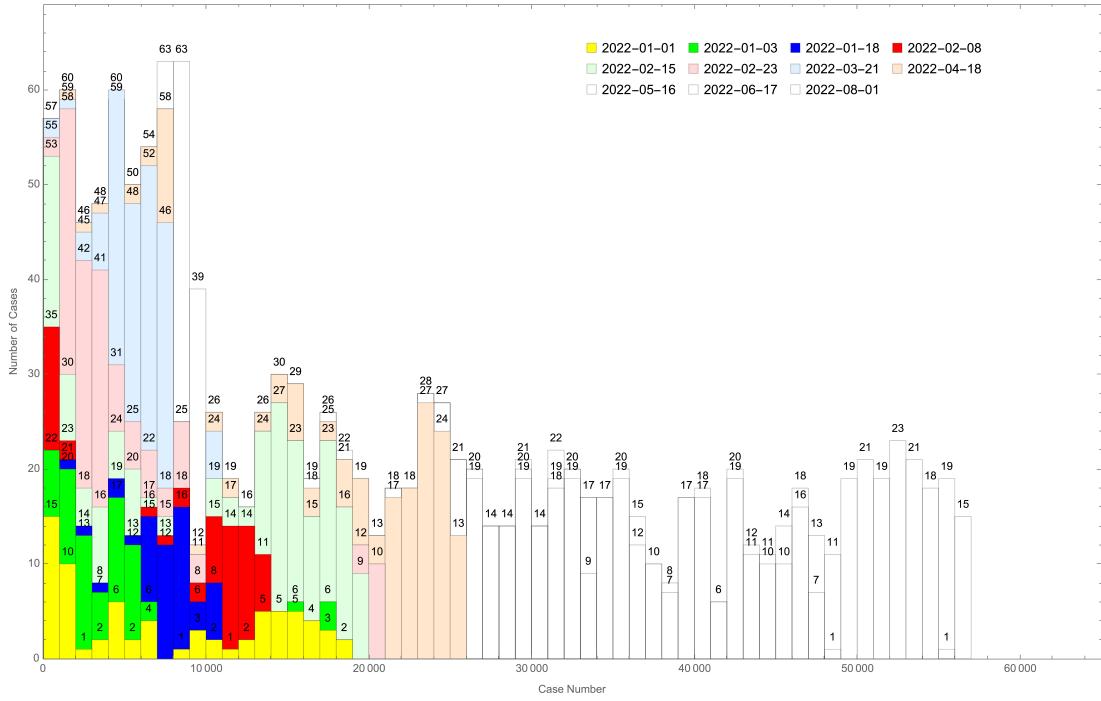


Figure 6: The FIFO-Regime starting in Algiers on April 18.

Release Date	VB Name	Valid for:	AF-cutoff
September 7, 2021	October, 2021	November, 2021	5300
	November, 2021	December, 2021	7000
November 8, 2021	December, 2021	January, 2022	13500
December 8, 2021	January, 2022	February, 2022	20000
January 7, 2022	February, 2022	March, 2022	21000
February 8, 2022	March, 2022	April, 2022	50000
March 10, 2022	April, 2022	May, 2022	63800
April 7, 2022	May, 2022	June, 2022	Current
May 6, 2022	June, 2022	July, 2022	Current
June 6, 2022	July, 2022	August, 2022	Current
July 1, 2022	August, 2022	September, 2022	Current

Table 2: Visa Bulletin for DV-2022 AF.

Now let's have a look at Algiers Algeria. The AF region has a different Visa Bulletin (Table 2) but the principle is the same. In the following discussion we'll omit the Tunis transfers. On June 28. cases were scheduled in Algiers and then transferred to Tunis. After that another 50 cases were scheduled for Algiers. These cases add another layer of complexity that is not necessary at this moment, but will be discussed in (Chapter 5.3).

From October-January DS-260 were processed in FIFO order. Only cases under 20000 were added to the AV-Queue. After that DS-260s were processed in CN-Order and added to the AV-Queue. On January 7. all the FIFO cases below 21000 entered the AV-Queue, as well as the first CN-Ordered cases. More DS-260s were processed in CN-Order and added to the AV-Queue until February 8. Shortly after February 8. every FIFO case under the cutoff of 50000 that was fully processed entered the AV-Queue. The AV-Queue at this point looked as follows:

Random to cutoff (bef. Jan) | FIFO cases < 21000 & CN-Order cases (bef. Jan) | (2)  
| CN order (Jan - Feb) | FIFO cases < 50000 | ...

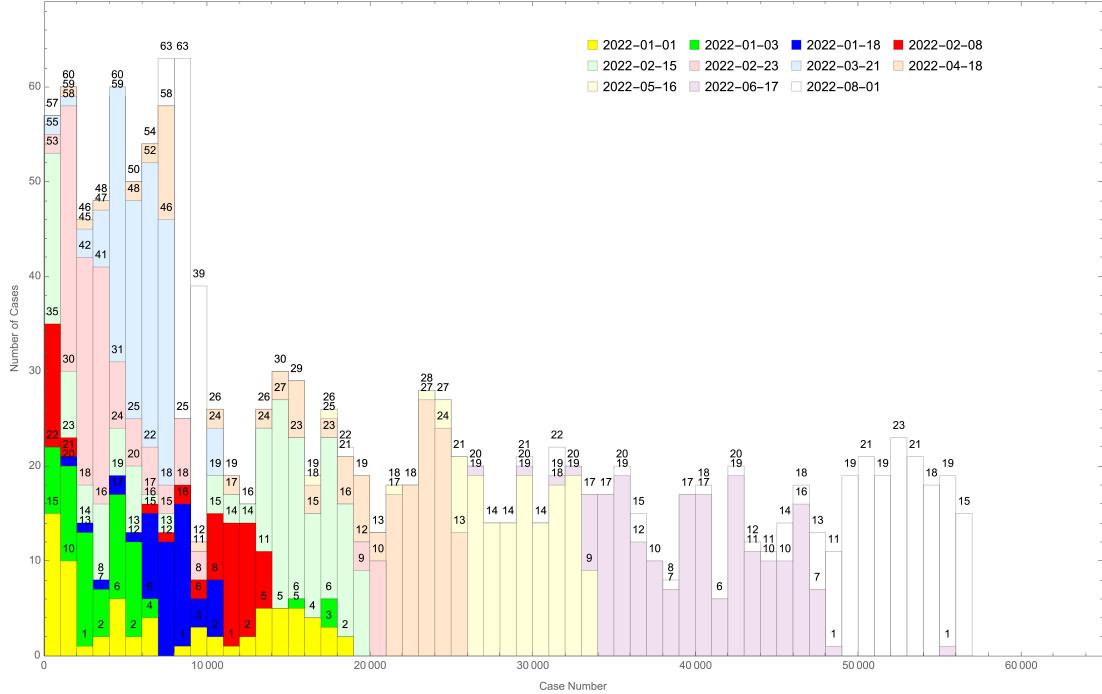


Figure 7: The FIFO-Regime reaching the 50000 cutoff.

So let's analyse how it developed. Until February 15. scheduling under 20000 took place. On February 23. the transition from FIFO cases under 21K to CN-Order was reached. On March 21. the most CN-Order cases, processed between January 7. and February 8. were scheduled. On April 18. the final CN-Order cases from January to February were scheduled and the big chunk of FIFO cases, which were processed between October-January was reached. In Algiers on or shortly after February 8. 539 cases below CN 50000 entered the AV-Queue. Due to embassy capacity it took until June 14. to schedule them in Algeria (Figure 7). The case above 50000k is not allowed within the model as only cases below the cutoff of 50000 were added to the AV-Queue the same date. And indeed that case 2022AF55917, got his 2nl on March 10. for Paris and transferred to Algiers afterwards.

Contrary to Europe the 50000 cutoff was not a de facto current situation and on March 10. additional

243 FIFO cases below the cutoff of 68000 were added to the AV-Queue and scheduled on August 1. There were no or very little cases added to the AV-Queue between February and March. That's in contrast to for example Casablanca. On August 1. the end of the FIFO-Regime was reached and the AV-Queue was again in CN-Order. The two light-blue peaks between 9-10K.

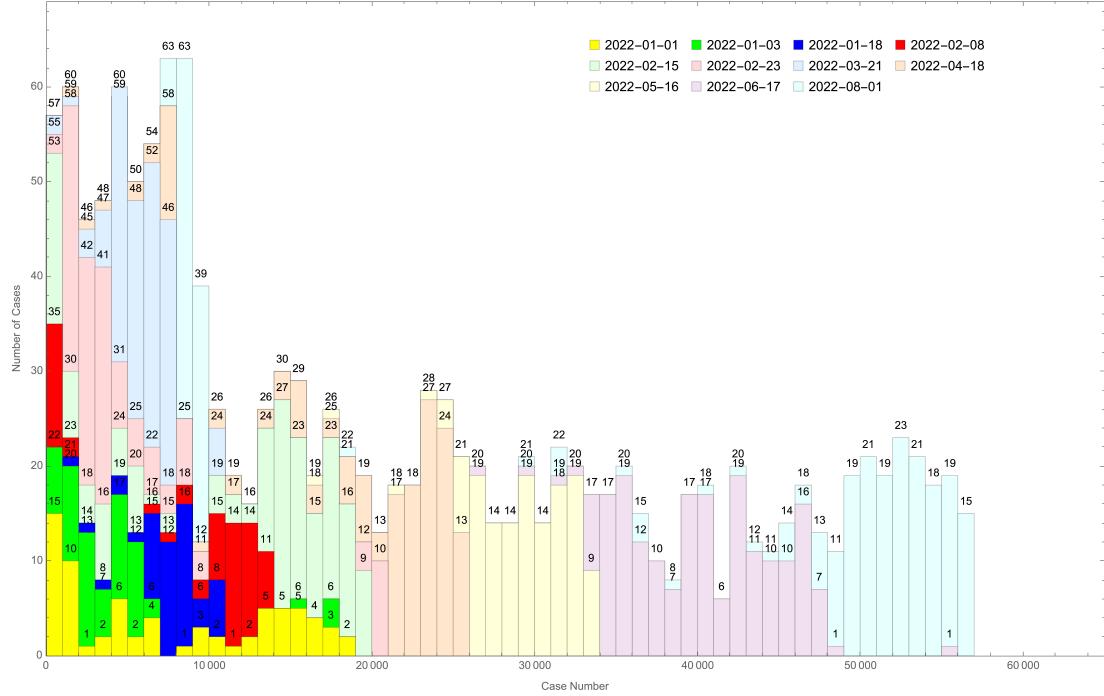


Figure 8: Algiers finishing after the The FIFO-Regime.

Although the principle is the same, the scale is vastly different. The cases added to the AV-Queue on February 8. were 539 and on March 10. another 243 cases were added. First we note, that it scales to Warsaw and Frankfurt on the amount of selectees. To make further verifications, we compared it with four cases, we had the exact data of due to lawsuits.

CN:	DS-Submission Date	AV-Transition	2nl
AF180xx	Jul 14, 2021	May 4, 2022	No
AF187xx	Jun 13, 2021	May 4, 2022	No
AF407xx	May 14, 2021	Sep 16, 2021	Jun 13, 2022
AF425xx	Jun 9, 2021	N/A	No

Consistent with our observation above, the only the case which got fully processed before January got it's 2nl for August in the light purple regime of (Figure 7). It is now clear, why people suspect that an early submission date is important. Because in an embassy like Algiers it was. If the DS-260 was not submitted by the middle of May and finished processing before January the case didn't receive a 2nl for Algiers in April, May, June or July. There was a slight chance to get it in August if the CN was low enough to be in the CN-Order peak between 7K-10K.

Finally we note, that the cases next in the AV-Queue would continue on right of the small light blue peak and go on top of the FIFO-Regime like in Frankfurt (Figure 5). As a matter of fact, since Casablanca has done a great job lately, this can be seen in (Figure 9)

### 3.2.2 Casablanca - Morocco & Addis Ababa - Ethiopia

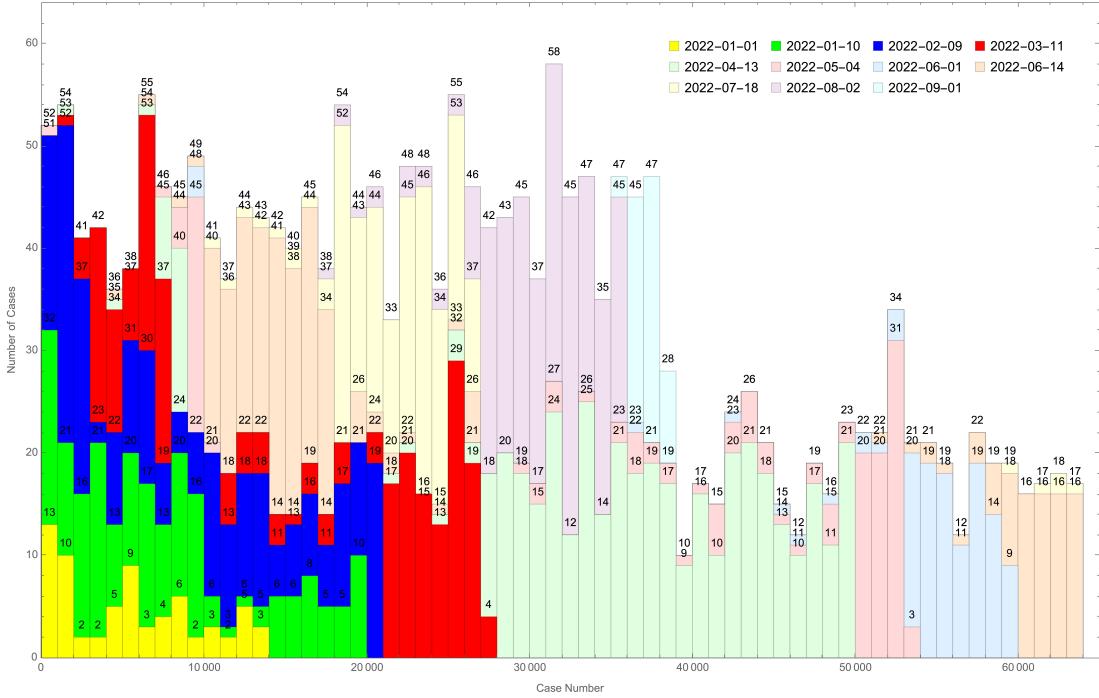


Figure 9: Casablanca Scheduling.

Comparing Casablanca (Figure 9) with Frankfurt (Figure 5) we see, that Casablanca couldn't finished it's cases, but is scheduling above the FIFO-Regime. The wrap around and then scheduling above the FIFO-Regime is a direct result of the many FIFO cases entering the AV-Queue at once. In Casablanca (Figure 9) we see, that a few cases were added to the AV-Queue between February and March. That's not clear for Algiers (Figure 8).

It should be mentioned that we look at the Embassies isolated, when in reality DS-260 processing was done for a whole region. There are some indications, that the process of DS-260s was paused, if enough cases were already in the AV-Queue to be scheduled and the focus was shifted to embassies, where the DS-260 processing was behind. One such indication are reassessments from large embassies like Frankfurt to small embassies like Stockholm. The DS-260 processing started immediately after the reassessment. We suspect this is also the reason there were very few cases added to the AV-Queue between February and March in Algiers.

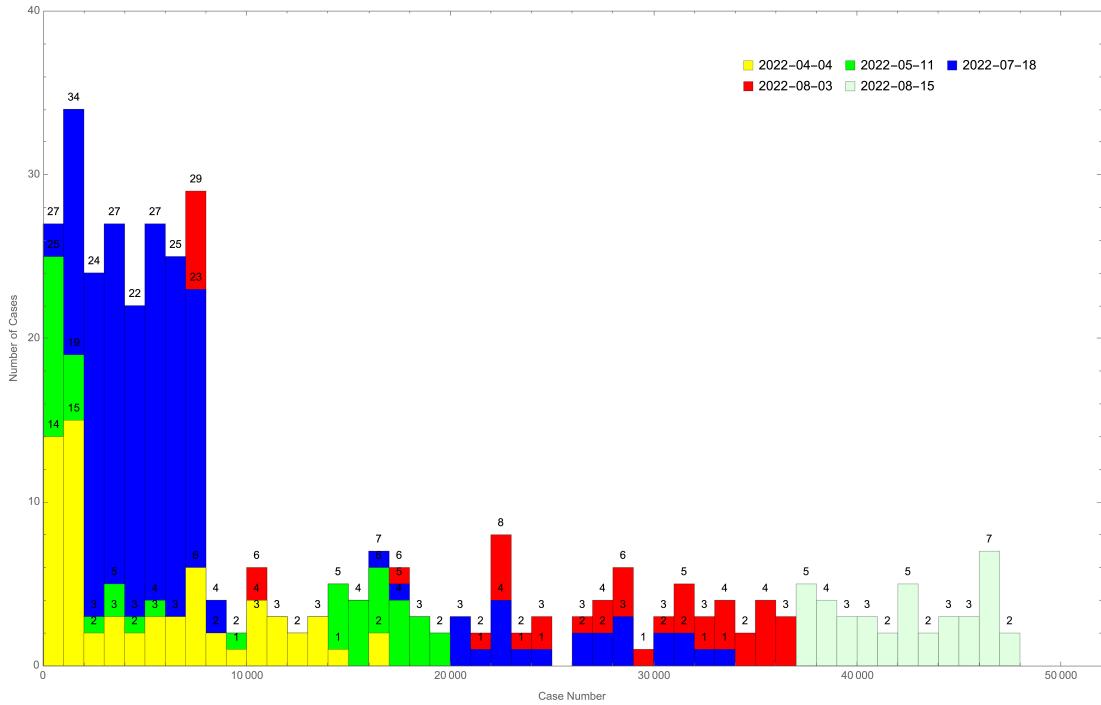


Figure 10: Addis Scheduling.

Finally let's have a quick look at Addis, one of the worst performing embassies in 2022. As can be seen in (Figure 10), Addis hasn't finished their FIFO cases yet, they didn't reach the 50000 cutoff mark yet. That means Addis hasn't finished scheduling cases that were processed by KCC before January.

### 3.3 Examples Asia

Release Date	VB Name	Valid for:	AF-cutoff
September 7, 2021	October, 2021	November, 2021	2700
	November, 2021	December, 2021	4000
November 8, 2021	December, 2021	January, 2022	6000
December 8, 2021	January, 2022	February, 2022	8000
January 7, 2022	February, 2022	March, 2022	8300
February 8, 2022	March, 2022	April, 2022	17000
March 10, 2022	April, 2022	May, 2022	30000
April 7, 2022	May, 2022	June, 2022	Current
May 6, 2022	June, 2022	July, 2022	Current
June 6, 2022	July, 2022	August, 2022	Current
July 1, 2022	August, 2022	September, 2022	Current

Table 3: Visa Bulletin for DV-2022 AS.

Before we go on to Asia, let's summarize the wrap around. As we've seen if the cases touch the cutoff line, and by touch we mean the cases reach it at any time after it was active, they wrap around. The reason being that in the time the cutoff held back part of the FIFO cases, CN-Order cases could be added to the AV-Queue. These cases have lower CNs, therefore they are on the lower side of the spectrum and it looks like they wrap around. In Asia the VB was also increased by almost 100% but had, like Africa, one more

cutoff in May. Additionally there are potentially three different cutoffs. Those for Asia, Nepal and Iran. We'll look now at Amman, which mostly schedules AS cases without Nepal and Iran.

### 3.3.1 Amman - Jordan

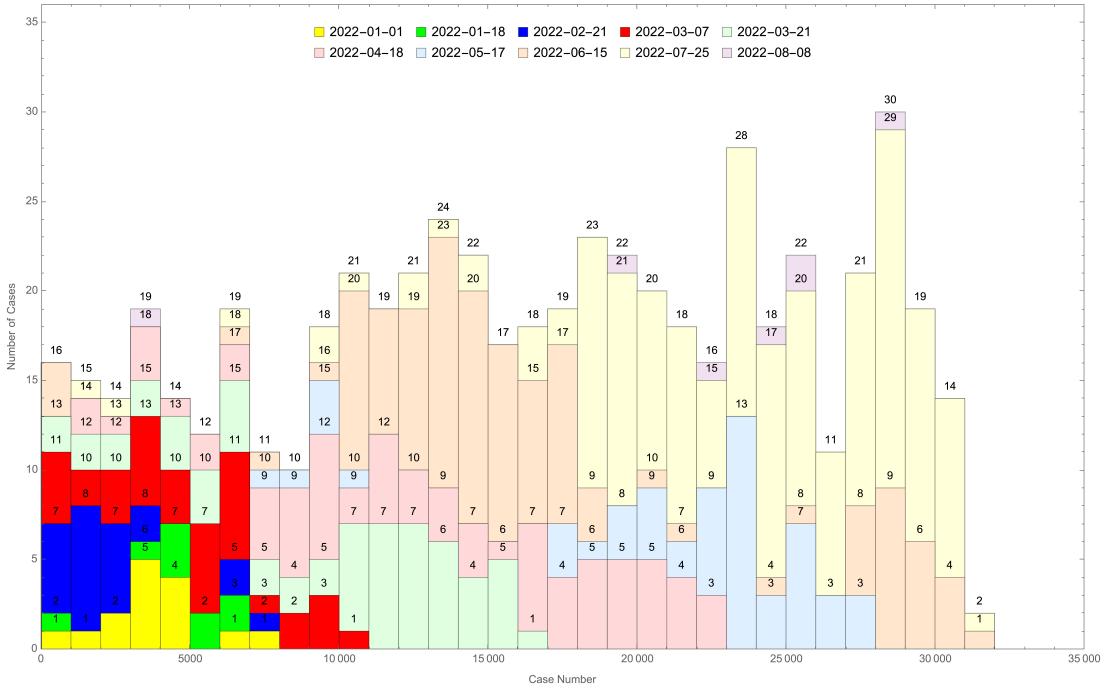


Figure 11: Amman Scheduling.

Let's start with filling the AV-Queue. We'll omit the reasoning behind it from now on. First the random cases up to the cutoff line entered the AV-Queue up to late December. In January KCC added cases in CN-Order up to the cutoff of 8300. On February 8. all FIFO cases under the cutoff of 17000 became eligible and entered the AV-Queue. In February more cases in CN-Order were added to the AV-Queue. After March 10. the FIFO cases under the cutoff of 30000 became eligible and were added to the AV-Queue. Between March and April more cases in CN-Order were added to the AV-Queue and on April 7. the last FIFO cases entered the AV-Queue. From here on out, only CN-Order cases were added. The AV-Queue looked as follows:

Random cases < 8000 | FIFO cases < 8300 & CN-Order cases bef. Jan. | FIFO cases < 17000 | (3)  
 CN-Order cases (Jan-Feb) | FIFO cases < 30000 | CN-Order (Feb-March) | FIFO cases <  $\infty$  |  
 CN-Order (after March)

Now let's see how it developed in (Figure 11). The random cases were scheduled up until February 21. Yellow, green and blue. After that the first FIFO cases and the CN-Order cases before January as well as the FIFO cases  $< 17000$  are reached. The 6 red cases past the 8000 mark are already from the FIFO  $> 17000$  regime in AV-Queue (3). On March 21. The FIFO cases  $< 17000$  were all scheduled and a few of the CN-Order cases done in January-February are reached. As explained above here they wrap around at the cutoff of 17000. Next on June 15. the CN-Order cases added between January and February are finished in light red and we enter the FIFO regime  $< 30000$  also light red. The light red cases end at 23000. That is not a cutoff line and not a wrap around. Now we continue in the FIFO regime on May 17. in the light blue cases. Here we have to note, that the light blue cases don't touch any cutoff yet. the 30000 is not reached.

Therefore they can't wrap around. The light blue peaks on the right are also not Iranian or Nepal cases because they were added to the AV-Queue in March. The reason for the cases before and on top of the red cases is given in (Chapter 5). Finally on June 16. the rest of the FIFO cases is scheduled. The cutoff is reached and the cases wrap around into the CN-Order regime done after March. These are now finished in the following months.

Big picture, we can identify the FIFO-Regime on the bottom of the histogram and once they reach the full range, they wrap around and the CN-Order regime goes on top.

### 3.3.2 Colombo - Sri Lanka

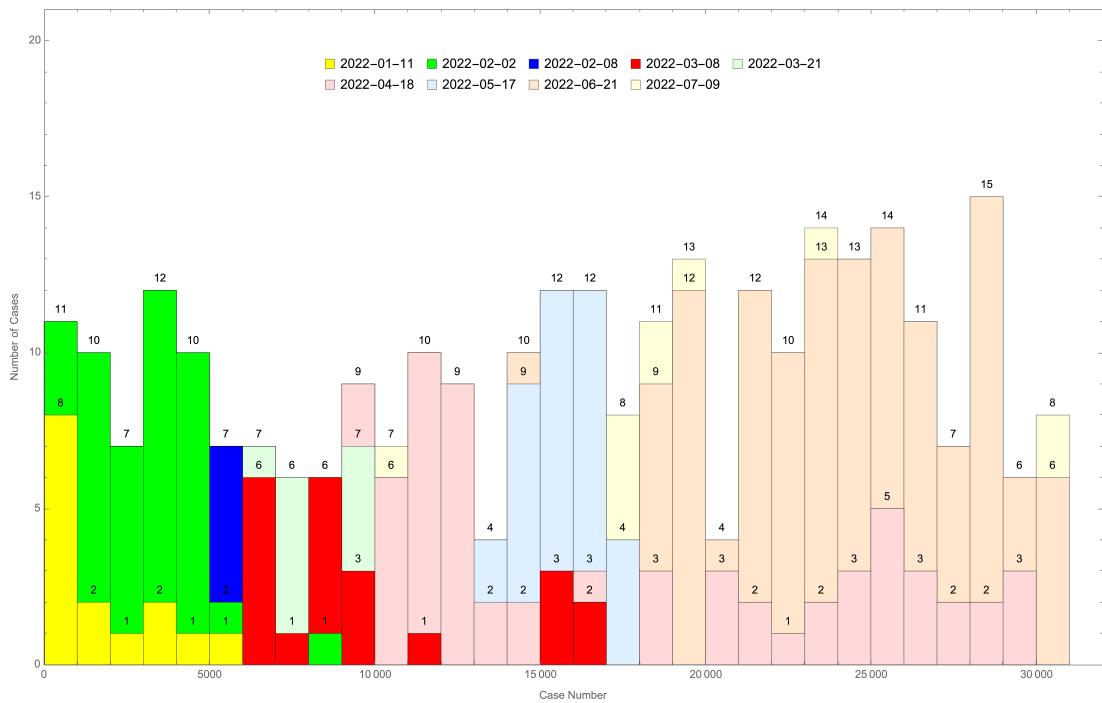


Figure 12: Sri Lanka Scheduling.

The filling of the AV-Queue is exactly the same as in Amman. We know use AV-Queue (3) to see how it developed in Colombo. Up until February 8. only cases below the cutoff of 8000 were scheduled On March 8 we reach the FIFO cases up to the cutoff of 17000. Note that the regime CN-Order and FIFO  $\downarrow$  8300 is also scheduled but only contained a few cases. On June 21. the CN-Order cases done in January-February, are scheduled as well as all FIFO cases  $\downarrow$  30000. They touch the cutoff of 30000. Now they wrap around and the CN-Order cases added in February-March are scheduled, light blue peak form May 17. Finally the last CN-Order cases are scheduled on June 21., finishing the AV-Queue, as we reach the cutoff. The additional cases from July 9 go on top in random order, as these are either reassessments or very late submissions. They were added after the AV-Queue was emptied.

## 4 Scheduling

The examples given above, contain all information necessary to understand scheduling and what caused skipping in DV-2022 scheduling. The regimes of the AV-Queue can be of different sizes or be empty, but every embassy if split up into regions and looked at the applicable VB follows the AV-Queue sequence.

One additional layer that we will touch on later is the question of mixed AV-Queues like in Ankara. An additional subtlety in Ankara is that Iranian cases follow a different VB. Therefore three different VBs have to be looked at to build up the AV-Queue, which we will do in (Chapter 7).

## 4.1 The Visa Bulletin

The Visa Bulletin (VB) comes out once a month and contains the cutoffs for two months in advance. For example the February VB comes out in January and already contains the dates for March. Normally the release for the VB is between the 8. and the 15. of a month. After the release of the VB scheduling for the 'next' month starts. Here 'next' has to be read as two months in advance. KCC tries to schedule at least 6 weeks in advance. After the release of the February VB in January the interview appointments (2nls) for March will be sent out. After the March VB, released mid February, the April 2nls are sent out and so on and so forth.

## 4.2 The Visa Bulletin increase

We want to briefly touch on a heuristic explanation of how the Visa Bulletin should be increased and why even if the program runs smoothly there can be a delay in scheduling.

Let's take Europe as an example. The upper bound during the selection process in 2018 was around 4500 selectees. Not one country had more selectees than that. That's not random, but a controlled cutoff during the selection process. The highest number of selectees were Russia, Turkey and Uzbekistan. It stands to reason one of these countries had the most DS-260 submissions. For the sake of argument, let's assume Moscow reports back they have interview capacity for 100 cases in February, Turkey has interview capacity for 65 cases and Uzbekistan for 200 cases. Since there are holes in the case numbers, KCC has to check, in what range they have processed DS-260 to fill the 600,400 and 285 slots. For simplicity in this hypothetical example we're simply tripling the numbers.

Embassy:	Capacity for Feb:	CN-Range:
Moscow	100	1000-1300
Uzbekistan	200	1000-1600
Ankara	65	1000-1185

Fictitious example for VB Increase.

If KCC were to decide to raise the VB only up to 1185 every case under that would get processed. However capacity would be wasted in Moscow and Uzbekistan. They could also raise the VB up to 1600, now cases in the CN range of 1185-1600, which are current would not get an interview in Ankara because of the limited capacity in that month. Another alternative is to find a reasonable middle ground, so that they almost max out the capacity of Uzbekistan, but don't overshoot the VB by so much that it can't be handled in the following months.

Additionally all of that is just a next-neighbor approximation. In reality KCC can report back much more to ensure a reasonable VB raise. Full amount of DS-260 processed for an embassy for instance.

The point being, it is nearly impossible to raise the VB in such a way that every case at every embassy becoming current, will get scheduled in that month. Capacity is always a limiting factor.

As an extreme example, assume the embassy in Sarajevo moves their facilities and can't take cases in February-April. It would be completely unreasonable to freeze the whole VB for Europe, just because of that and that's not even considering the fact Sarajevo might finish their cases in just a couple of months.

Similarly, Accra can't stop the Africa VB.

### 4.3 Case Number Distribution

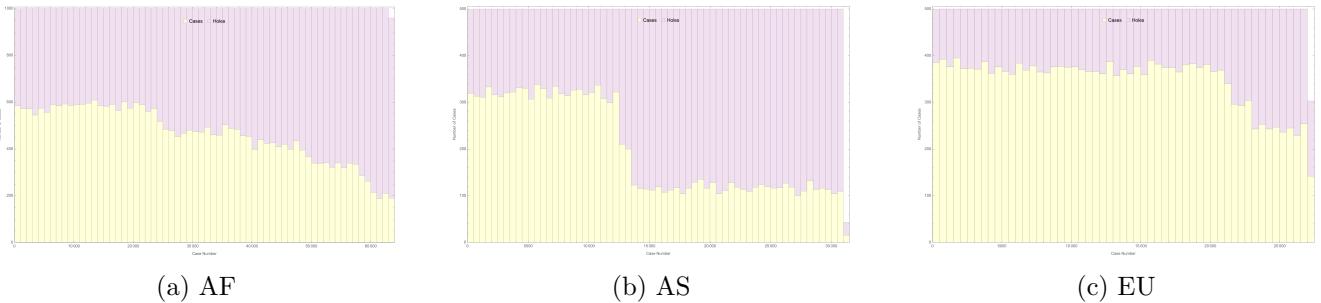


Figure 13: Distribution of cases in AF, AS and EU

Case numbers from different regions can't be compared, just by comparing the numbers. As the CN-Distribution (Figure 13) shows, the case number range from EU (Figure 13c) and AS (Figure 13b) are comparable in the range from [1, 27302] for EU and [1, 31042] for AS. However there are 19016 EU cases distributed of that CN range, while there are only 12504 AS cases distributed over the similar range. Additionally the AS cases are predominantly distributed up to around 13K (Figure 13b). The AF cases are completely different. Their case numbers distribute over a range of [1, 63959] with a total of 29684 cases. As an example let us look at the following CNs 2022AF15000, 2022AS15000 and 2022EU15000.

CN:	Position:	Relative Position	Highest CN	Total cases
AF15000	8720	29.18 %	AF63959	29884
AS15000	8776	70.19 %	AS31042	12504
EU15000	11194	58.87 %	EU27302	19016

Table 4: Comparing 15K CNs for three different regions.

As seen in (Table 4) an AF number of 15K is relatively low, while the same number in AS is relatively high. Additionally the case numbers are not fully random. The Nepal cases are only distributed between [1, 14000] which can be seen by looking at the cases scheduled in Kathmandu. Egyptian cases are similar, the Iranian cases are distributed predominately in the lower CN range as well. Therefore comparing case numbers without additional rescaling makes little sense.

### 4.4 The AV-Queue

The AV-Queue is the “waiting list” for all cases that have finished processing and have been allocated a visa number. Each embassy has its own individual AV-Queue. The question is, when does a case enter the AV-Queue? The answer is, after it is fully processed and the CN is under the published cutoff line. We will say the case is “About To Be Current” (ATBC). It simply means, The case is under the currently published cutoff line, but the month for which it applies is not reached yet.

Here is a real example from DV-2022. The AF case AF424xx became current on April 1. The VB for April was published on February 8. and the case entered the AV-Queue on February 17. 43 days before it became current.

So, the case was ATBC on February 8, and Current on April 1. For a case to enter the AV-Queue it has to be ATBC. Obviously every case that is current is also ATBC.

Up until now we have assumed, that the AV-Queue gets updated the moment the VB comes out. According to Morgan Miles, the visas get send to the Visa Office (VO) and get a visa number allocated before the cases enter the AV-Queue.

## 4.5 The AV-Transition date

The AV-Transition date, is the exact date and time including seconds, when a case transitions to AV status and enters the AV-Queue. Transition to AV means a visa number is allocated to a fully processed case. The AV-Transition is done in batches, not every single cases has a different AV-Transition date, although that might happen occasionally. For reasons given in (Chapter 5), AV-Transitions are done in batches. Data from DOS also indicates that<sup>7</sup>.

## 4.6 Changing position in the AV-Queue

The AV-Queue is ordered by AV-Transition date. It is FIFO in that sense. Cases that enter the AV-Queue first, are in front of cases that enter the AV-Queue at a later date. If cases get scheduled, they leave the AV-Queue and the cases with a later AV-Transition date move up in the AV-Queue.

Reassignments from one post to another, get pulled out of the AV-Queue and get a new AV-Transition date once they enter the new AV-Queue<sup>8</sup>. Therefore reassignments can't skip cases in the AV-Queue. The only way to get pushed back in the AV-Queue is, if posts accept post 2nl transfers. These cases get scheduled immediately and take presidency. Since the capacity of the posts is limited, that can apparently push back cases in the AV-Queue, when in reality the case gets scheduled out of the other AV-Queue. Post 2nl transfers are the only way cases can be pushed back in the AV-Queue.

### 4.6.1 The Tesfaye lawsuit queue

In the Tesfaye lawsuit two queues were published by Curtis Lee Morrison showing cases in Addis Ababa on April 26[2] and June 3. The case 2022AF37281 was in AV-Queue position 397/452 on April 26. The AV-Queue position changed to 833/1143 on June 3.[3] That's a push back of 436 cases in the AV-Queue.

If the AV-Queue is ordered by AV-Transition date, a later added case can not get in front of a previous transitioned case.

Consequently the data was corrected on June 22.[4] giving the correct AV-Queue position of 213/1143. 211 case were scheduled until August 9. 169 cases were scheduled on July 18 and 42 cases on July 28, putting case AF37281 in queue position two. On August 9. 20 more cases were scheduled and AF37281 received the 2nl.

Finally note that also the jump of 184 cases is not possible, because there were only 108 total cases scheduled in Addis Ababa prior to June, telling us the previous AV-Queues were false all along.

## 4.7 Reordering the AV-Queue

Due to the Tesfaye lawsuit data it was assumed by many that the AV-Queue was ordered by case numbers. The primary reason why reordering mixed AV-Queues by case number is not ad hoc possible is the stark difference between the case number distribution in different regions (Figure 13). For two AV-Queues to be

<sup>7</sup>The data sample is two small to make a definitive statement form that alone. Furthermore every page given by the government has multiple typos and copy and paste errors making that also a highly likely possibility.

<sup>8</sup>At the moment only Embassy requests can pull an AV cases out of the AV-Queue

sorted in any sensible way, they would need rescaling. Additionally the rescaling had to take place for Asia, Iran and Nepal independently. That is not how the system is set up. The primary control factor for the different regions are the different VBs

AV-Queues are ordered only by AV-Transition date. The difference between the mixed regions is only controlled by the VB.

## 5 Splitting up the FIFO-Regime into multiple AV-Transition dates

Until now, we've assumed that the FIFO cases were all added to the AV-Queue at once. If that was true outliers like the 12 light orange cases on top of the light blue cases in (Figure 5b) could not happen, because the cases are ordered by CN within the same transition date.

In this chapter we will analyse how different AV-Queue configurations would look like in the final result of scheduling. Additionally considering the pure amount of cases it seems reasonable to assume they were processed in chunks. That provides another problem we've glanced over until now and which will be solved by the end of this chapter.

### 5.1 How a Histogram works

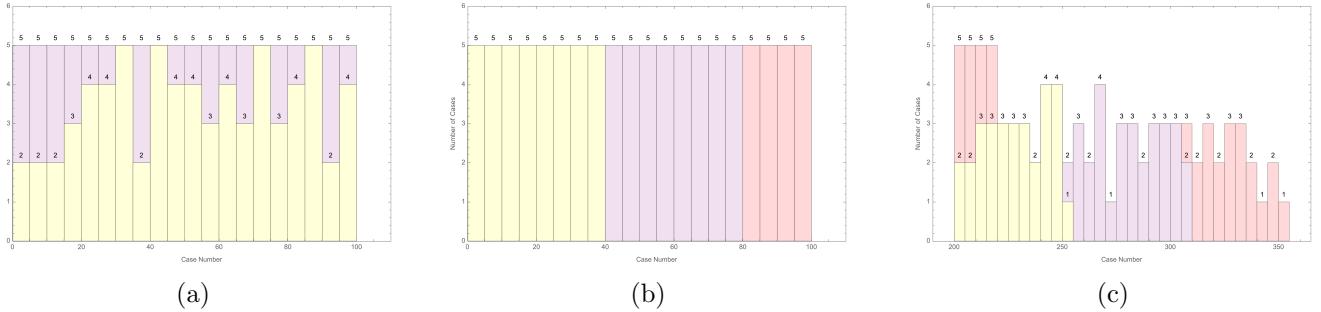


Figure 14: Histogram filled with random numbers twice. Taken from an AV-Queue three times. Three takes from a spliced AV-Queue.

Let's first recapitulate what a histogram is. Every case number exists only once. So, no matter how many case numbers there are, if the histogram is big enough, there will be exactly one case populating one position on the axis. What the histogram does is bundle these numbers up into groups. Let's forget about Case Distribution for a moment. If every number exists, and the histogram is filled up, we would see a very long rectangle on the axis. With the height of one and the length of the number of cases.

#### 5.1.1 Random AV-Queue with only one transition date

Let's assume for the moment, the AV-Queue has only cases within the same transition date and the cases within are random. If we now take all the cases from the AV-Queue in two batches, embassy capacity, we would see cases populating the whole histogram. The only upper boundary is the cutoff line from the VB at the time of entering the AV-Queue. There would be no other virtual cutoff. The second batch, taken would be distributed again over the whole range.

## Example

As an example, let's take a list of the numbers from 1-100 and shuffle them. Then we draw 70 numbers first and 30 numbers second. The cutoff line would be at 100 in this example. What we get is shown in (Figure 14a). If cases are in random order in the AV-Queue, they will always populate the whole range allowed by the cutoff. There can not be a virtual cutoff like seen in (Figure 5a) where the cutoff is at 25500. That is how we know the CNs are not random in the AV-Queue but are indeed ordered by CN.

Finally we note when we say random fill, we mean the cases populate the whole range of allowed case number range given by the cutoff.

### 5.1.2 AV-Queue with one transition date and ordered within.

Next let's look at an AV-Queue that has the same transition date but is ordered by CN within that. In that case, we would see a virtual cutoff, simply by the highest number taken by the embassy. As an example, we take again the numbers from 1 to 100 and take them out in batches of 40,40 and 20. What we get is obviously what is shown in (Figure 14b). That is already pretty close to what we've seen in Warsaw (Figure 3) or Algiers (Figure 7). However, it is impossible in this scenario that cases taken in the second batch are on top of the batch taken first. As the cases are ordered within the same transition date they would've been in the correct order from the beginning. Therefore cases like the 12 orange cases in (Figure 5a) are not possible.

### 5.1.3 Splicing two ordered AV-Queues

Next let's assume the AV-Queue is spliced up by two different transition dates and ordered within these two transition dates. Simulating that the FIFO cases were not added to the AV-Queue all at once. We start with an example. We take a list of numbers from 200-350, shuffle them and splice it at position 80, and sort both lists independently before we join them back together. We end up with a AV-Queue that looks as follows:

Ordered list [200, 350] | Ordered list [200, 350]

Like CNs every number is only present in one of the two lists<sup>9</sup>. Now we ended up with a list of length 150 and take out 3 times from that list in steps of 30. What we get is shown in (Figure 14c). We note that the second take is like (Figure 14b), with no isolated cases on top of the first take. That's because these two takes were, like above, before the splice. The third take, crosses the splice and the small cases in the second AV-Queue, later AV-Transition date, are in front and are therefore now on top of these cases. If we would continue in this toy example, the cases would continue where the light red cases ended, on top of the light yellow, light purple cases. If all cases are taken out, we would be back at (Figure 14a). The cases would not continue right of the light red cases past the 300 mark. In fact the 300 is the cutoff in this example. Therefore this wrap around is only possible if the case numbers reach the cutoff line.

The reason is, if the cases are distributed over the full CN range and if a reasonable sample is taken out, the cases will be distributed over the full CN-Range in both AV-Queues and will certainly not concentrate in a small CN-Range. In this model cases can only go back, if the CNs hit the cutoff line.

A splice of this manner does not explain how some cases are in front of a previous scheduled cases when we are in the FIFO-Regime. Even though it is possible that the AV-Queues are spliced at exactly the point before the CNs hit a cutoff line, this explanation would be based too much on rare coincidences to be solid. We therefore can abandon the idea that the FIFO cases were split up into multiple batches and then ordered within.

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<sup>9</sup>What we're trying to say is: Let  $A, B$  be two sets with  $A, B \neq \emptyset$ ,  $A \cup B = [200, 350]$  and  $A \cap B = \emptyset$ . Further  $|A| = 80$ . Look at any set with  $\text{Ord } \{x|x \in A\} \cup \text{Ord } \{x|x \in B\}$ .

#### 5.1.4 Splitting up the FIFO-Regime

Let us recapitulate what we know.

1. The AV-Queue is ordered by AV-Transition date.
2. The FIFO cases are ordered by CN in the AV-Queue.
3. All FIFO cases had to be together when they were sorted by CN.

Until now we've assumed that the FIFO cases all entered the AV-Queue at once and were ordered within that transition date in the AV-Queue. Like discussed above, that makes it impossible for single cases that have lower CNs to be in lower ranges unless we wrap around at the cutoff line. That leaves us with the only explanation, the FIFO cases were all ordered together by CN before they entered the AV-Queue. The order of operations is extremely important at this point and since we're talking about FIFO cases, which are random, this can be confusing. So let's be very clear. The cases started processing in random order but once they were finished they were sorted by CN. All cases that finished and were eligible for scheduling got scheduled, the others were kept on hold and kept in order. Again, it has to be pointed out, in order for the FIFO cases to be ordered, they all had to be together. It is impossible to order the first 50 cases, then the next 50 and so on. If 50 cases out of the range from 13500 to 27000, or the equivalent in a different region, are randomly distributed, they will always populate over the whole range of CNs like in (Figure 14a) or (Figure 14c).

## 5.2 KCC - Visa Office interaction

Now that we've dropped the necessity for a single transition date for the FIFO cases and have established how it was possible to add the cases in bunches to the AV-Queue while maintaining the order, let's look at if from a more practical point of view. The process at KCC is as follows [1, pp.25-26]:

1. KCC finishes processing
2. Cases get reported to the Visa Office.
3. Cases get allocated a visa number.
4. Cases get added to the AV-Queue.

If the cases which finished processing were reported to the VO at once and got visa numbers assigned in multiple batches or KCC did hold on to them and reported them in multiple batches, makes very little difference. In the following we'll assume they were reported VO and returned in multiple batches from the VO to KCC<sup>10</sup>.

These batches were then added to the AV-Queue. Now the batches have a different AV-Transition date, but because they were ordered as a bunch before, they are now in the AV-Queue in order. It's important to point out that the order of operations only becomes important for the big batch after the VB Release. Within the time all of the FIFO cases were sent back to KCC, none of the CN-Order cases entered the AV-Queue, so we are talking a few batches within a couple of hours, days to maximal two weeks. Otherwise the AV-Transition date would still take precedence and the FIFO cases would not be together the way they are.

The 12 small cases in (Figure 5a) finished processing after the first batch was assigned a visa number and added to the AV-Queue and before the second batch was assigned a visa number and reported back to KCC. That way these 12 cases were in front of the second batch reported back from KCC. On a slightly bigger scale the same happened in Algiers which we'll look at now.

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<sup>10</sup>The other equivalent scenario would be the cases were reported in batches from KCC to the VO.

### 5.3 The Tunis Repull

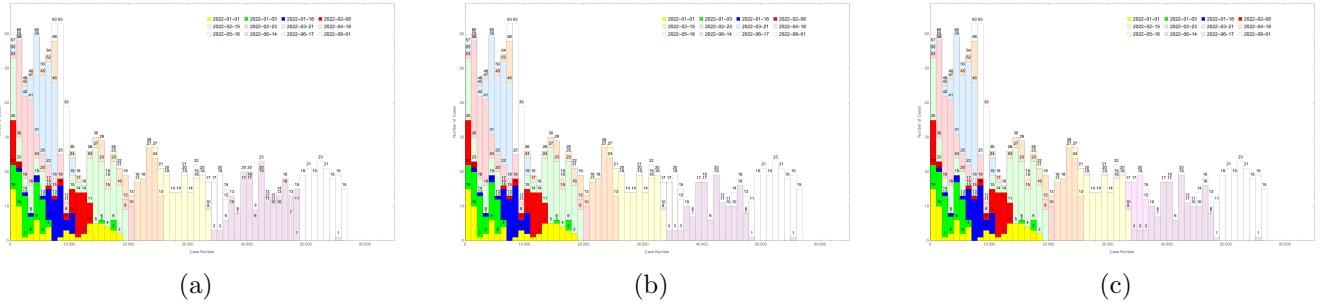


Figure 15: Cases leaving Algiers for Tunis and adding additional cases.

Like stated before in the initial discussion of Algiers (Chapter 3.2.1) we omitted the Tunis cases. The original cases were scheduled on June 14 (Figure 15a), Note the hole at the beginning of the light purple cases. Shortly after more cases were transferred to Tunis (Figure ??). On June 17. additional 50 cases were scheduled for Algiers (Figure 15c). We point out that in the first schedule (Figure 15a) no purple cases are on top of the light yellow ones, indicating both were added to the AV-Queue at once. The cases that were scheduled on June 17. (Figure 15c) had to have a later AV-Transition date than the fist ones, otherwise would've been in order and scheduled together with the other light purple ones on June 14. This rescheduling is only possible if the cases had different transition dates.

Finally we want to point out that it is not unusual that the cases seem to fill the hole. That's exactly what we would expect as seen in (Figure 14a).

### 5.4 DVIS and the Calender

Let's briefly talk about the Diversity Visa Information System (DVIS) The Errata which was given to multiple lawsuits [5, 6] states that DVIS creates a calender and fills the calender with cases from the AV-Queue based on the AV-Transition date and the regional rank order<sup>11</sup>. First, it can't be AV-Transition date and Regional Rank Order. Both operations don't commute as shown (Chapter 5.1.4) So, it should be clearly stated which one comes first. Second they talk about filling the calender from the AV-Queue, suggesting that and additional operation takes place when the cases leave the AV-Queue. As we've seen the cases can't be in the AV-Queue in random order within the same transition date and only be taken out and sorted in parts, as we would see a pattern as in (Figure 14a). To save the idea we can assume DVIS looks at the whole AV-Queue with a specifically set range of dates, i.e. all cases get ordered within the same Transition time of 2 weeks for example. That provides other problems and doesn't work either, if the range is too small it wouldn't get all the FIFO cases in the AV-Queue and we wouldn't see a pattern like in Algeria. If the time period were too long, the FIFO cases would get mixed up with the CN-Order cases and they would get scheduled first. That's why this concept can be eliminated.

Another possibility is that they were only talking about filling the calender at the posts in a certain order. For example if a post, gives KCC three days to schedule interviews, DVIS could fill the first day with the

<sup>11</sup>To schedule cases, KCC creates a calendar for each post in DVIS, which DVIS fills by ordering and selecting cases from the AV queue for that post based on the date that cases transition to AV status and the regional rank order (i.e., the case number) of each case. A case transitions to AV status after the Visa Office allocates a visa number to the selectee and, if any, the selectee's derivative beneficiaries. DVIS reads the regional rank order left-to-right, which means cases are ordered by the region code (AF, AS, EU, NA, OC, or SA) first and by the rank number (i.e., the eight-digit number following the region code) second. When a post provides or updates its capacity and schedule for DV interviews to KCC, KCC inputs the capacity and schedule by post into DVIS, which then fills those appointments.[5]

lowest CNs and so on. In that scenario it would actually make sense to order the cases in alphabetical order (AF,AS,EU,NA,OC,SA), because all cases of one region would be together and the Commanding Officer (CO) would have similar cases, see similar documents grouped together. We tried to check the 99 cases that got their 2nl on March 31. for Ankara (Table 8). These cases were scheduled for May 17. (1 case), May 26 (11 cases) and May 27 (87 cases). If these cases were scheduled in alphabetical order, the case on May 17. should've been an AS case. However, luckily it was a no-show and was an EU-Case, last updated May 17<sup>12</sup>. 2022EU14112.

Therefore also this hypothesis has to be abandoned.

## 6 How to approximate the AV-Queue

In (Chapter 3), we wrote down AV-Queues for a region based on the Visa Bulletin and the following assumptions:

1. Cases become eligible to enter the AV-Queue when they are ATBC.
2. FIFO cases that were finished prior to January enter the AV-Queue as soon as they are ATBC
3. CN-Order cases enter the AV-Queue after the FIFO cases stopped by a cutoff.

Table 5: Rules to estimate the form of the AV-Queue from the VB.

The main controlling factor to create the AV-Queue is the Visa Bulletin. AV-Queues of every region can be approximated this way. Writing them down this way, gives no knowledge of how big the individual regimes are or if they are slightly distorted by the mechanisms described in (Chapter 5). It's a pure qualitative description. If the AV-Queue has only one regime CN-Order or FIFO, they trivialize down to VB cutoff lists.

### 6.1 Making predictions

There are certain predictions that can be made. For example looking at Addis (Figure 10), we can see they haven't finished their FIFO cases yet. Therefore the next entries in the AV-Queue are cases that finished processing early and are just under the 50000 mark. After that are cases processed between January-February. These cases would be in CN-Order and below 21000. Next are the FIFO cases below 63800, which finished processing before January. Similarly in Warsaw (Figure 4) the next cases in the AV-Queue are cases in the CN-Range starting at 13000.

In future years when the AV-Queue is reduced to only one regime, predictions will revert back to normal case number order and the usual capacity given by a designated embassy. This approach will be interesting for embassies who build up an AV-Queue, to see how far behind in the scheduling process they are.

To make individual predictions more information will be needed. Like the AV-Transition date, which can be estimated by inquiring from KCC. This will only be relevant for cases assigned to bad working embassies.

In order to create a quantitative model to tangible predictions, more information would be needed. Starting with the Case Number Distribution (Figure 13), as well as other factors like number of selectees, Derivative Rate and Response Rate for a country.

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<sup>12</sup>Now it was again updated on August 5. Maybe they managed to reschedule the case.

## 7 Scheduling of mixed AV-Queues

CN:	AV-Queue
EU213xx	845/1574
AS95xx	962/1574

Table 6: Two cases from different regions in the same AV-Queue[7].

Every embassy has one AV-Queue. There are not separate AV-Queues for different regions. We know that from AV-Queues given by the government[?]. Cases from different regions were in the same queue as shown in (Table 6) of length 1574.

We now write down a mixed AV-Queue for Ankara. The applicable VBs are those for Asia (Table 3) and Europe and Iran (Table 7) Following the assumptions given in (Table 5), we get:

$$\begin{aligned}
 & \text{Random number EU} < 13K \& \text{AS} < 8K \& \text{IR} < 6K \text{ (bef. Jan. 7)} | \quad (4) \\
 & |\text{FIFO EU} < 13.5K \& \text{FIFO AS} < 8.3K \& \text{FIFO IR} < 6K \& \text{CN-Order EU, AS, IR (bef. Jan 7.)}| \\
 & |\text{CN-Order EU} \& \text{CN-Order AS} \& \text{CN-Order IR (Jan-Feb)}| \\
 & |\text{FIFO EU} < 27K \& \text{FIFO AS} < 17K \& \text{FIFO IR} < 6.1K| \\
 & |\text{CN-Order EU} < 27K \& \text{CN-Order AS} < 17K \& \text{CN-Order IR} < 6.1K \text{ (Feb-Mar)}| \\
 & |\text{FIFO AS} < 30K \& \text{FIFO IR} < 8.5K| \\
 & |\text{CN-Order EU} < 27K \& \text{CN-Order AS} < 30K \& \text{CN-Order IR} < 8.5K \text{ (after Mar 10)}| \\
 & |\text{FIFO EU} < \infty \& \text{FIFO AS} < \infty \& \text{FIFO IR} < \infty| \\
 & |\text{CN-Order EU} \& \text{CN-Order AS} \& \text{CN-Order IR (after April 7)}|
 \end{aligned}$$

First we note that if we set AS and IR to zero in (AV-Queue 4), we get the (AV-Queue 1) for Europe again. Similar if we set EU and IR to zero, we get the (AV-Queue 3) for AS again.

Finally, we wrote a careless “&” in (4), which has no meaning, as we don’t know how regions interact. As mentioned they’re most likely only handled by the VB, but which region finishes first and gets included in the AV-Queue first, is unknown and not described by (AV-Queue 4). The “&” gives no order relation to our AV-Queue and AS, EU FIFO cases can very well be interlaced based on our discussion in (Chapter 5).

### 7.1 Example Ankara - Turkey AS cases

We’ll now look at the AV-Queue for Ankara for the AS cases. Ankara is one of the main Embassies for Iranians. It is reasonable to assume that a vast majority of AS cases belongs to Iranians. However, we’ll start by looking at the whole AS AV-Queue. By setting EU to zero in (AV-Queue 4), we get the AV-Queue

for all AS cases.

$$\begin{aligned}
& \text{Random number AS } 8K \& \text{ IR} < 6K \text{ (bef. Jan. 7)} | \\
& | \text{FIFO AS} < 8.3K \& \text{ FIFO IR} < 6K \& \text{ CN-Order AS, IR (bef. Jan 7.)} | \\
& | \text{CN-Order AS} \& \text{ CN-Order IR (Jan-Feb)} | \\
& | \text{FIFO AS} < 17K \& \text{ FIFO IR} < 6.1K | \\
& | \text{CN-Order AS} < 17K \& \text{ CN-Order IR} < 6.1K \text{ (Feb-Mar)} | \\
& | \text{FIFO AS} < 30K \& \text{ FIFO IR} < 8.5K | \\
& | \text{CN-Order AS} < 30K \& \text{ CN-Order IR} < 8.5K \text{ (after Mar 10)} | \\
& | \text{FIFO AS} < \infty \& \text{ FIFO IR} < \infty | \\
& | \text{CN-Order AS} \& \text{ CN-Order IR (after April 7)}
\end{aligned} \tag{5}$$

We point out again, by setting EU to zero, we are only looking at a subsequence of the whole AV-Queue. All the EU cases are still in there. The AV-Queue is in principle the same as in previous examples.

Release Date	VB Name	Valid for:	EU-cutoff	Iran-cutoff
September 7, 2021	October, 2021	November, 2021	5300	1450
	November, 2021	December, 2021	7300	2150
November 8, 2021	December, 2021	January, 2022	10000	4000
December 8, 2021	January, 2022	February, 2022	13000	6000
January 7, 2022	February, 2022	March, 2022	13500	6000
February 8, 2022	March, 2022	April, 2022	27000	6100
March 10, 2022	April, 2022	May, 2022	27000	8500
April 7, 2022	May, 2022	June, 2022	Current	Current
May 6, 2022	June, 2022	July, 2022	Current	Current
June 6, 2022	July, 2022	August, 2022	Current	Current
July 1, 2022	August, 2022	September, 2022	Current	Current

Table 7: Visa Bulletin for DV-2022 Iran and EU.

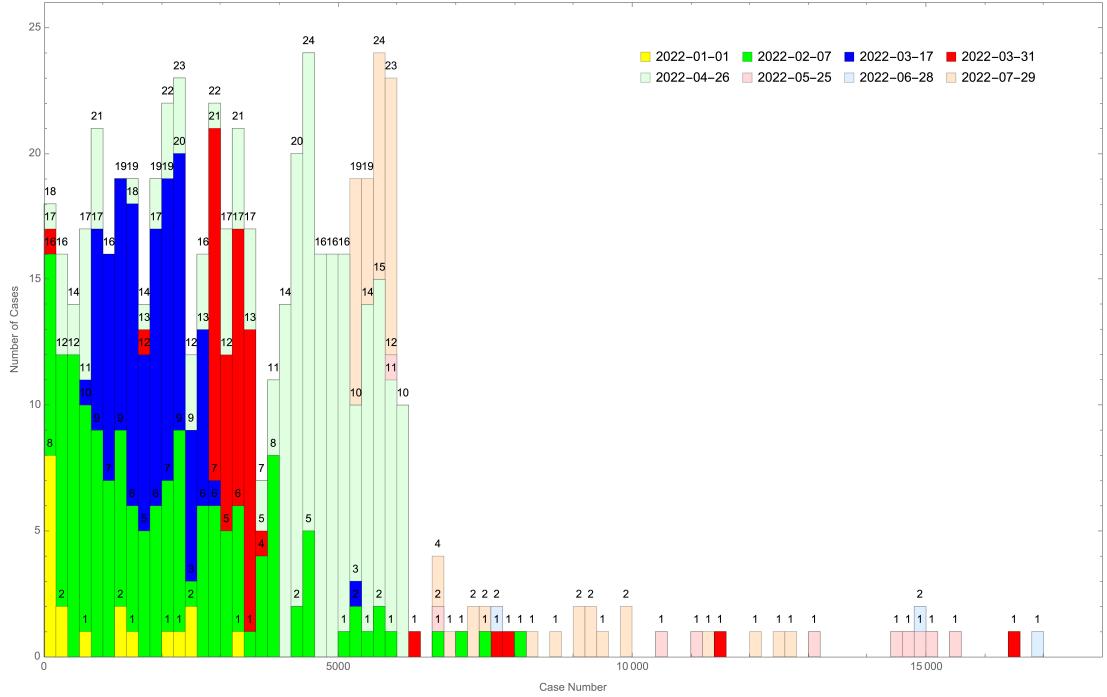


Figure 16: Ankara AS scheduling.

We now discuss on how it developed in (Figure 16). The first schedule in 2022 on February 7 already had cases up to 8.3K. We are therefore in the FIFO & CN-Order regime before January 7 in (AV-Queue 5). The green cases beyond the 6K can be identified as non Iranian since they're past the 6K regime. Next we enter the CN-Order regime from January-February in the blue peak from March 17. Iranian and AS cases in that regime are indistinguishable. Next we pass from the CN-Order regime red peak in the FIFO regime of AS cases  $< 17K$  and IR  $< 6.1K$ . Again, we can identify the few non Iranian cases past the 6.1K mark. The red peak is still a cumulation of indistinguishable AS and Iranian cases. We also note how few FIFO cases are in the AS regime  $< 17K$ . Confirming that the majority of the AS cases in Ankara are Iranians. Next we pass over in the CN-Order regime from February-March and see the big light green peak up to 6.1K, scheduled on April 24. Next we reach the FIFO regime for AS  $< 30K$  and IR  $< 8.5K$  and in the following two month only 13 AS cases get scheduled all in the FIFO regime, until on July 29. the part of the AV-Queue with the rest of the FIFO cases is reached and it wraps around in the CN-Order regime, forming the light orange peak after the 5K mark.

The interesting part is what happened in the two month when only 13 AS cases were scheduled? The answer is obviously in the EU part of the AV-Queue. Even without writing it down again, we know the Iranian VB only increased from 6K to 6.1K at the same time the EU VB increased from 13500 to 270000. All FIFO cases entered the AV-Queue at that time together with only a few Asian FIFO cases. All of the EU FIFO cases  $< 27000$  got in front in the AV-Queue. In order to make sense of this, let us look briefly at the EU part of Ankara.

## Ankara - Turkey EU

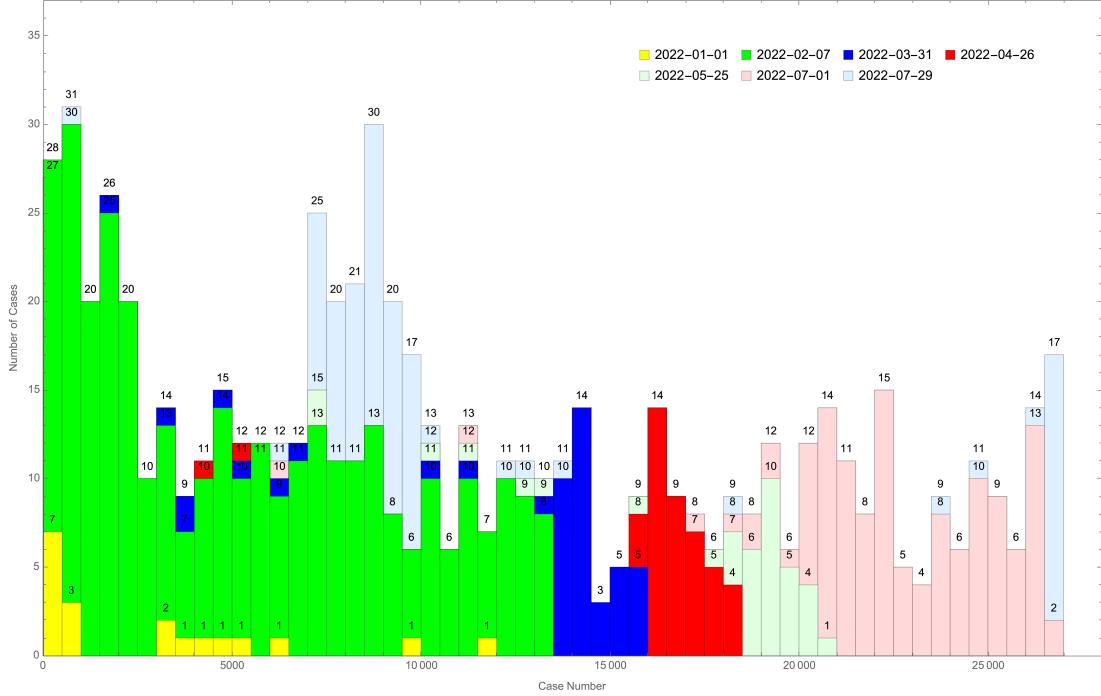


Figure 17: Ankara EU scheduling.

We use the EU (AV-Queue 1). The cases scheduled in on February 7. include FIFO cases up to 13500 as well as a few CN-Ordered cases from January-February. The FIFO-Regime < 27000 starts getting scheduled on March 31. until it hits the cutoff of 27000 and wraps back around into the CN-Order regime from February-March.

We note that a low CN-Order peak seems too be missing, left to the light blue peak. It is not clear why there are no EU cases in that regime. Even if they were neglected and the focus was shifted to the AS cases back in January-February, the should've been processed in CN-Order and added to the AV-Queue before the cases in the light blue peak starting at 7000.

We will now look at the order in which the EU and AS cases were scheduled.

AS-FIFO,CN-Ord.(Jan-Feb)	EU-FIFO	AS-CN-Ord. (Jan-Feb)	EU-FIFO	EU-FIFO	AS-FIFO	EU-FIFO
Mar 31	Mar 31	Apr. 26	Apr. 24	May 25	May 25	Jul 7

(6)

Note, the dates indicate when the cases were scheduled, not when the cases were put in the AV-Queue. Comparing (6) with (AV-Queue 4), with  $IR = 0$ , we see they're almost identical. The only difference is the EU-FIFO scheduled on March 31. got transitioned in the AV-Queue before the AS-CN-Order cases scheduled on April 26. We note again, all of the insertions in the AV-Queue happened shortly after February 8. The fact that the FIFO cases got in front of the AS cases is a clear indicator that there is no alphabetical prioritization for the AS region, as in such a scenario the AS cases should've been prioritized.

Finally, let's recreate the same AV-Queue directly from the 2nls received in Ankara after February 2.

Date:	AS:	EU:	Capacity:
Jan 1	19	19	
Jan 7	1	2	3
Feb 7	145	319	464
Mar 17	96	1	97
Mar 31	52	47	99
Apr 26	203	44	247
May 25	10	34	44
Jun 28	3	96	99
Jul 7		30	30
Jul 29	53	91	144
Aug 10		2	2

Table 8: The amounts of 2nls received by Ankara for AS and EU<sup>13</sup>.

Based on the 2nls received in Ankara, we can reconstruct the AV-Queue<sup>14</sup> under the premise that the cases are bundled together, we get:

$$1 \text{ AS} | 321 \text{ EU} | 241 \text{ AS} | 48 \text{ EU} | 255 \text{ AS} | 78 \text{ EU} | 13 \text{ AS} | 126 \text{ EU} | 53 \text{ AS} | 93 \text{ EU} \quad (7)$$

With the capacity given in (Table 8) and the AV-Queue (7), the 2nl distribution in (Table 8) can be regained. This is an easy way to reconstruct the AV-Queue for any given embassy. The VB based model (AV-Queue 4) is necessary to understand from which regime the 2nls came.

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<sup>13</sup>The table omits the transferred cases present in Xarthisius' list[8]. The dates are also 'Ready' dates taken from Frank[9].

<sup>14</sup>AF cases are omitted.

## 8 Scheduling in DV-2023 and beyond

The events in DV-2022 were triggered by a very late start of the program, which in itself was caused by court orders for DV-2021, forcing KCC to work on DV-2021 up until the last days of September [1, p.19]. The fact that KCC started working normally and only realized in December that they had to change their ways, namely dropping the Document Procedure and switching to processing DS-260s in CN-Order, caused the chaotic scheduling behaviour we saw.

Both of these events in conjunction gave an tremendous advantage to cases, which submitted their DS-260 early and where processed before the change happened. As we have seen in an embassy like Algiers, late meant by the end of May.

It's important to note that both events, changing DS-260 processing and increase of the VB were necessary to cause this advantage. This was a black swan event and will mostly likely never be repeated<sup>15</sup>.

In this chapter we summarize how KCC schedules cases and how DS-260 submission and opening will affect it.

### 8.1 DS-260 processing

One of the open questions for DV-2023 and beyond is, if KCC will keep processing the DS-260 in CN-Order or go back to starting the process in FIFO order. The fact is, it will make very little differences. It would only make a difference for cases with a low CN, who submit their DS-260 late; around October-December. CN-Order processing would ensure that such a DS-260 submission starts processing right away. KCC would receive it, it would be sorted near the top, because of the low CN, and start processing. Because it is a low CN, it would enter the AV-Queue after finishing processing. If the VB is increased in reasonable amounts, cases added to the AV-Queue will leave it, soon afterwards and get scheduled.

If KCC goes back to starting DS-260 processing in FIFO order, a low CN that would submit late, like October-December, would be behind the previous DS-260s and had to wait until these are processed. Normally KCC finishes the backlog by January the next year. Therefore such a case had to wait until a maximum of 3 month to start processing. Since we're talking about a low CN, the case would get scheduled soon after finishing processing and get scheduled.

After KCC is done with the backlog in late December and or January, the DS-260 processing methods become indistinguishable. The moment the DS-260 gets send in, it will start processing and finish in a couple of weeks. It simply doesn't matter if a few DS-260s are ordered by CN, if they you can start processing all of them in one or two days.

All of the above is also only relevant if the CN is at least about to be current. As long as a DS-260 finishes processed before it's ATBC it makes no difference if it's finished processing four month or four days before that stage. Both fully processed DS-260s that become ATBC the same day, start their journey to the AV-Queue the same day.

#### 8.1.1 Reopening the DS-260

The same argument holds true for reopening the DS-260. As long as it will again finish processing before the CN is ATBC, opening the DS-260 makes absolutely no difference. The nuanced part here is, that it has to finish processing. That will again vary depending on the opening being done before the backlog is finished or after the backlog is finished. If KCC goes back to processing the DS-260 in FIFO order an early submitted

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<sup>15</sup>We're waiting for an eruption for the Yellowstone supervolcano. So maybe we can enhance the model then. Fingers crossed.

DS-260, which will be opened before it started processing can potentially loose it's early submission rank and move back in the FIFO submission queue. If KCC stays with processing DS-260 in CN-Order, reopening will not have such an effect. Except for boundary condition situations, the position in the FIFO queue would be lost but regained after resubmission. Except for the few special cases mentioned below (Chapter 8.1.2), a serious mistake in the DS-260 should be corrected as soon as possible. The sooner the mistake is corrected, the higher the chances are that the DS-260 gets fully processed before it becomes ATBC. The maximum delay such an opening could cause in any of the cases is an interview for March.

The DS-260 would finish processing in January as the latest and be added to the AV-Queue immediately. After the backlog is finished, opening can only be delayed if the CN becomes ATBC during the opening and resubmission phase. As soon as the case enters the AV-Queue, KCC doesn't allow to open the DS-260 anymore. If the DS-260 is opened and it's not finished processing before the CN becomes ATBC, all cases that are finished processing and also transition to ATBC, will enter the AV-Queue before the opened case. Even in that event if the VB is increased in reasonable amounts, there will only be a manageable amount of cases getting in front and, as the designated case would enter the AV-Queue soon after it's finished processing, it will still have an earlier AV-Transition date, than all the cases that become ATBC at the next VB increase. As long as the delay caused by opening the DS-260 does not put it in danger of becoming ATBC by July of the fiscal year, it is not critical at any decent working embassy. If a given embassy builds up a long AV-Queue, see chapter (Chapter 8.2.1), a delay of 2 months might very well be critical. Because a long AV-Queue causes a delay between entering and leaving the AV-Queue that can cause a case, that opened the DS-260 and wasn't again finished processing before it became ATBC sometime early in the year to not

### 8.1.2 Reopening the DS-260 - who is in danger?

There are three conditions a case has to fulfill to be advised not to open the DS-260 in DV-2023 and beyond. First, The case needs to have a low CN. Any CN that will only be ATBC after the DS-260 backlog is finished in December-January, will not feel an effect of opening the DS-260. Second, the case needs to be assigned to a potentially bad working embassy, like Accra, Addis, Khartoum and so on. Only bad working embassies will build up an AV-Queue, see (Chapter 8.2.1), and a delay between entering the AV-Queue and leaving the AV-Queue can occur. We note bad working embassies can't necessarily be recognized in advance. Bad working in one year doesn't automatically imply bad working the next year and vice versa. Third, the case needs to have an early DS-260 submission date in the first place. Like discussed above, this condition is only relevant if KCC reverts back to starting DS-260 processing in FIFO order. If the first DS-260 submission date is not early, within the first half of May, reopening at a bad working embassy becomes irrelevant. To summarize, cases should not reopen the DS-260 if they fulfill all of the three conditions.

1. The case will likely become ATBC before the January VB, released in November.
2. The case is assigned to a potentially bad working embassy.
3. The case has an early first DS-260 submission date.

Every other case, which does not fulfill all three conditions should reopen the DS-260, if necessary.

### 8.1.3 Having a high CN number - Fear of not becoming current

Especially within Schengen, people with a high CN often have doubts about submitting their DS-260 if there is a high risk of not becoming current at all. The moment the DS-260 is submitted the person shows immigration intent. As long as the visa isn't denied the Visa waiver ESTA<sup>16</sup> can still be used. One question in ESTA is:

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<sup>16</sup>ESTA is the acronym for Electronic System for Travel Authorization.

"Have you ever been denied a U.S. visa you applied for with your current or previous passport, or have you ever been refused admission to the United States or withdrawn your application for admission at a U.S. port of entry?"

If that question has to be answered with "Yes", ESTA will most likely be denied.

As long as the DS-260 is submitted and the candidate wasn't denied at the interview, that question can still be answered with "No". However, the CO at entry in the United States will know about the DS-260 submission and can deny entry for that. We have no data about how likely such an event is, as mostly the negative experiences get reported.

Nevertheless, many people avoid sending in their DS-260 until they're sure the number will become current. For the majority of embassies that is a fine decision. The DS-260 will be processed within a few weeks and scheduling will happen shortly after. The exception to that would be any embassy with a backlog. However, within Schengen there is also the option to transfer the case to another embassy.

## 8.2 AV-Queues in a functioning year

The change from FIFO processing to CN-Order mid year caused the AV-Queues to have different regimes, as discussed in (Chapter 6). As long as there won't be a change mid year there will only be one regime. Either FIFO or CN-Order. The AV-Queues will therefore trivialize to

$$\text{CN-Order} < \text{VB Sep} \mid \text{CN-Order} < \text{VB Sep,Oct} \mid \text{CN-Order} < \text{VB Sep,Oct,Nov} \mid \dots \quad (8)$$

or the same with with CN-Order replaced by FIFO.

### 8.2.1 Building up AV-Queues

As we've discussed before, as long as the VB is increased in reasonable amounts, the AV-Queue is emptied shortly after it was filled. The VB does not increase linearly. A sudden increase of the VB, late in the year could cause a longer AV-Queue momentarily. If the embassy works properly this won't cause much of a problem either, but might cause a delay of one month.

The real danger for building up an AV-Queue over time, will be for overcrowded embassies or embassies, which refuse to take DV cases like Accra in DV-2022. It's important not to get blinded by the absolute performance. If an embassy does 200 cases a month but has 3000 cases lined up, 600 won't get an appointment even in the rare event of these cases becoming current.

Likely candidates are Accra, Addis-Ababa, Cairo, Khartoum, Warsaw, Tashkent and all we forgot. Also good performing embassies are in danger, if too many cases reassign or transfer there after seeing the great performance in the previous year. It is therefore important to always be aware of the current dynamic of events.

### How to identify a long AV-Queue

A long AV-Queue is easily identified by looking at the scheduled cases. If the CNs fill up the whole range up to the cutoff line, the cases were added recently to the AV-Queue and everything is working fine. The moment the cases scheduled follow an apparently virtual VB line. If the cases scheduled obey a VB that was there one, two or more month ago, the scheduling is behind the filling of the AV-Queue. The moment that happens the (AV-Queue 8) can be used to identify how long the scheduling is behind and actions towards reassignments or transfers should be considered.

### 8.3 Summarizing scheduling for DV-2023 and beyond

For DV-2023 we can summarize the scheduling procedure as follows:

1. DS-260 gets send in.
2. DS-260 starts and finishes processing.
- 3a. All cases that finished processing and are not ATBC, will get ordered by CN and wait to become ATBC.
- 3b. All cases that finished processing and are ATBC, will get a visa number assigned and enter an AV-Queue.
- 3c. All cases that finished processing and are current, will get a visa number assigned and enter an AV-Queue.
- 4 Each AV-Queue is ordered by AV-Transition date. Cases with the same AV-Transition date were ordered by CN before.
5. The AV-Queue for each embassy will get emptied in order by the respective embassy.

The DS-260 processing part was discussed in more detail above.

## Summary & Conclusion

During the 20222 Diversity Visas program the case numbers scheduled were not in alignment with the currently active cutoff line. Contrary, the cases were obeying a cutoff line that was no longer relevant for more than 2 month. Furthermore by looking at AV-Queue positions of cases with their respective AV-Transition dates, given by the DOS, we saw cases being transitioned to the AV-Queue before they were current. The later observation lead to the conclusion, that the date a fully processed case enters the AV-Queue is not the date it becomes current, but the date the case is about to become current i.e. the Visa Bulletin release date. Based on those observations, we constructed multiple qualitative accurate AV-Queues from the Visas Bulletin to describe the KCC scheduling process during DV-2022. The AV-Queues explained the timing of the events happening in Warsaw on and Frankfurt on . and all other posts, we applied the methodology to.

The switch from processing DS-260s in Case Number Order instead of First-In-First-Out, was observed by many early in the program year. The fact that the cases were apparently scheduled out of order was also observed by many selectees and was commonly known as 'May Submissions'. These cases coming out of the FIFO-Regime were skipping many selectees with a lower case numbers.

With our approach, we showed that the change in DS-260 processing in combination with doubling the cutoff line, was the sole cause for these cases to be skipped. In (Chapter 5) we investigated the nature of the AV-Queue and showed that the cases are ordered by Case Number before entering the AV-Queue. This observation gives a secondary correction mechanism to the AV-Queues purely based on the Visa Bulletin. In (Chapter ??) we looked at mixed AV-Queues and tried to find the application of any alphabetical order in scheduling cases from different regions. As far as we can tell, there is no such alphabetical order applied. Finally we looked out on DV-2023 and gave conditions under which the opening of the DS-260 can effect the position in the AV-Queue purely based on KCC' methodology of scheduling.

# Appendices

## VB- Release Date:

VB-Name:	Official Release Date:	Real Release date:	Difference
December	November 8, 2021	November 15, 2021	7 days
January	December 8, 2021	December 16, 2021	8 days
February	January 7, 2022	January, 13, 2022	6 days
March	February 8, 2022	February 16, 2022	8 days
April	March 10, 2022	March 16, 2022	6 days
May	April 7, 2022	April 14, 2022	7 days
June	May 6, 2022	May 12, 2022	6 days
July	June 6, 2022	June 10, 2022	4 days
August	July 1, 2022	July 8, 2022	7 days

## 9 References

- [1] Jesse M. Bless, M. D. M. Jessica Preston vs. Kentucky Consular Center, Exhibit M. Case: 6:22-cv-00015-CHB-HAI , 113 (2022).
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- [4] et al., W. H. W. Notice of Errata to Defendants Exhibit H, Attachment 1 in Support of Defendants' Motion to Dismiss. Case 1:22-cv-00411-CKK , 6 (2022).
- [5] et al., W. H. W. Notice of Errata to Defendants' Exhibit A in support of Defendants' Motion to Dismiss. Case 1:22-cv-00411-CKK , 4 (2022).
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- [8] Kowalik, K. DV Lottery Charts and Data, (2022). <https://dvcharts.xarthisius.xyz/>.
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