EVR migration procedures

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# Introduction

Commission Implementing Decision (EU) 2018/1614 (from here on the “EVR Decision”), requires on its Article 8, the need to migrate the existing vehicle registrations recorded in the national vehicle registers (NVRs) to the European Vehicle Register (EVR). This document presents the proposed procedure for the above migration.

# Legal References

Table 1 - References

| [N°] | Title | Reference |
| --- | --- | --- |
| [R1] | Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union.  | <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016L0797>  |
| [R2] | Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004. | <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016R0796>  |
| [R3] | Commission Implementing Decision (EU) 2018/1614 of 25 October 2018 laying down specifications for the vehicle registers referred to in Article 47 of Directive (EU) 2016/797 of the European Parliament and of the Council and amending and repealing Commission Decision 2007/756/EC. (“EVR Decision”) | <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018D1614>  |
| [R4] | Decision 2007/756/EC. (“NVR Decision”) | https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02007D0756-20181115 |

# Glossary

Table 2 - Glossary

| Acronym/Abbreviation | Definition |
| --- | --- |
| Agency | European Union Agency for Railways established by the Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 |
| ECM | Entity in Charge of Maintenance |
| ECVVR | European Centralised Virtual Vehicle Register, as defined in Decision 2007/756/EC  |
| EVR | European Vehicle Register, as referred to in Article 47 of Directive (EU) 2016/797 |
| ERA | European Union Agency for railways. See above “Agency” |
| IM | Infrastructure Manager |
| NSA | National Safety Authority |
| NVR | National vehicle register referred to in Article 47 of Directive (EU) 2016/797 |
| RE | Registration Entity, which is the body designated by each Member State in accordance with Article 47(1)(b) of Directive (EU) 2016/797 and Decision (EU) 2018/1614 |
| RU | Railway Undertaking |
| VVR | Virtual Vehicle Register, as defined in Decision 2007/756/EC |

# Legal background

Commission Implementing Decision (EU) 2018/1614, on its article 8(1) states that “*Member States shall ensure that data for registered vehicles is transferred from the national vehicle registers to the European Vehicle Register and this data shall be migrated by 16 June 2021. During the migration, the Agency shall coordinate with the registration entities the transition from the respective national vehicle registers to the EVR and the Agency shall ensure the availability of the IT environment”.*

Commission Implementing Decision (EU) 2018/1614, on its Annex II, 4.2, indicates the procedure migration from national vehicle registers (NVRs) to the EVR:

*The entity previously responsible for vehicle registration shall make all information available to the RE of the country where it is located.*

*Existing vehicles shall be registered only by one of the following Member States:*

* *the Member State where they were first authorised for placing in service in accordance with Articles 21 to 26 of Directive 2008/57/EC;*
* *the Member State where they were registered after they have been authorised in accordance with Articles 21 and 25 of Directive (EU) 2016/797;*
* *in the case of registrations transferred to the NVR of another Member State, by such Member State.*

# Plan for migration of data

## Introduction

### What will be transferred?

The data to be transferred will be the existing vehicle registrations, as they can be consulted from VVR, from each Member State’s national vehicle register (NVR). The Organisation, User and application data will not be migrated.

### Which Member States are effected and how will this work progress

This migration plan identifies two distinct types of Member State for which data will need to be migrated to the EVR centralised Application and Registration function (EVR CARS):

* those Member States which are presently using the standard National Vehicle Register (sNVR);
* those Member States which are presently using their own custom national vehicle registers connected via the translation engine (NVR-TE systems). These non-sNVR data sets must be transferred to a sNVR database by the MS before being handed to ERA (where the work will be undertaken in the same manner for each). Consequently, the process for non-sNVR Member States will be similar to the process for sNVR countries, but with the additional steps for the MS to prepare the sNVR and confirmation that this transfer of data has been correctly performed.

### Additional data requirements

The Member States should inform ERA concerning any additional or bespoke data fields (custom fields). This information should include a description of the existing fields for which data needs to be migrated as well as future fields which will need to be accommodated in the new EVR CARS system. To this end, each Member State should study both the sNVR and the new EVR data requirements to ensure that they are aware of what is included in each and also what would constitute additional data in each case. This examination should be undertaken **prior to starting the migration process**.

### No ongoing requests will be migrated

The EVR will follow a different procedure of application and registration of Vehicle Registrations and pre-registration of Vehicle numbers. Consequently, it will not be possible to migrate ongoing registration or pre-registration processes. The registration entity for the Member State should ensure that all processes in the Member State’s NVR have been completed before the NVR is frozen for the migration.

## Migration plan Member States using the sNVR:

There will be two phases for the migration of the data from a Member State which has an existing sNVR running for their NVR system, the test phase and the production phase. The test phase will be significantly longer than the production phase as it is considered crucial that the functionality of registration be available on the EVR as soon as possible after the freezing of the Member State’s sNVR system. The test phase will be iterative in that it will be run and re-run until the results that are expected have been shown to be reliably produced.



Figure 1 - sNVR migration

### Test phase

The purpose of the test phase is to test the migration of data from the production environment of the Registration Entity to the Test environment of EVR. This will allow the Registration Entity to validate the migrated data. This is expected to be a re-iterative process with the development of automated scripts, being run, results analysed and alterations made before running the changed scripts. The aim of the test phase will be focussed on reducing the time required between locking the Member States’ on the previous system and going live on the EVR CARS when the time comes to implement the production phase. Prior to the testing phase ERA will prepare automation scripts to move data between the sNVR and the pre-production servers.

1. ERA creates semi-automatic scripts/application code to move data from a standard SNVR database to an EVR CARS database. The aim of these scripts will be to extract, the data from the Member State’s existing production system, transform it by applying any changes required by the new EVR CARS schema and then load the data into the EVR CARS test system.
2. ERA prepares the pre-production environment for the new EVR CARS. The pre-production environment should be available to act as a substitute EVR CARS during the migration and is designed to be identical, in terms of the software environment, to the final production system. This work may involve the extension of the schema to allow for the migration and /or storage of additional fields.
3. MS provides a snapshot of the existing sNVR database. During the test phase various means of delivery will be appraised to identity the quickest and most reliable means. The extraction process should be carefully documented as should the means of transfer.
4. ERA installs the existing sNVR on a pre-production system. Once the schema of the sNVR is received it will be installed on the preproduction system, any configuration required will be logged and a script will be prepared to ensure that no manual changes will need to be implemented.
5. ERA prepares, extends and or refines the standard, pre-prepared scripts used to transfer the data from the exported sNVR to a pre-production EVR CARS database. This will involve ERA staff preparing changes to scripts to allow for any additional, existing data elements in the data set.
6. ERA runs the transfer from the sNVR to the pre-production. The ERA staff run the automated scripts to copy the data from the sNVR data set to the new EVR CARS data set in the preproduction environment.
7. MS examines the output on a pre-production EVR to ensure the data is correct. The Member State team will be examine the data that has been transferred to the EVR CARS schema to ensure that the complete set of data has been transferred. If there are issues identified, these will be analysed and diagnosed; the EVR CARS and the sNVR will be wiped and the process will return to step 4 of this phase. If no problems are found the process continues to the next step.
8. MS confirms that the data has been correctly transferred. If no problems are found the EVR CARS and the sNVR will be wiped and the process will return to step 4 of this phase. If there are no problems found again, the testing phase will be declared complete.

### Production phase

Once the data has been validated in the EVR test environment by the Registration Entity, a date will be scheduled between ERA and the RE for the purpose of the migration of data from the production environment of the Registration Entity to the production environment of EVR. The work will utilise the knowledge gained and the automation tools developed during the testing phase. At the end of this phase it will be consider that the MS “X” has been centralised in EVR. From that moment, it will no longer be available in ECVVR.

1. ERA installs the production environment for the new EVR CARS and prepares a clean production EVR CARS database. ERA will configure and prepare a new production environment for the installation of the Member State’s EVR CARS schema. This work may involve the extension of the schema to allow for the migration and /or storage of additional fields.
2. ERA creates the required user accounts for the MS administrators on the production system. The user accounts for the new MS administrative users will be requested from ERA and will be created by the ERA team. All non- administrative users will need to be created by the MS administrative users.
3. MS Freezes the use of their NVR. The Member State will freeze all write access to their NVR so as to ensure that there are no issues with changes being made to the data set during the migration process. The registration entities should ensure that no ongoing registration or pre-registration requests exist.
4. MS extracts sNVR data set and provides it to ERA. Using the same means of extraction and transfer as were documented during the test phase, the Member State will extract the schema from the NVR and transfer it directly to ERA.
5. ERA recreates the sNVR using the extracted schema and data provided by the MS. ERA will recreate the Member State’s NVR in a sNVR using the data and schema sent by the Member State and based on the configuration that was identified during the test phase.
6. ERA runs the scripts/ application code to move data from a standard sNVR database to the production EVR CARS database. This activity will follow the activity design that worked during the last two runs of the testing phase process.
7. Production system of the EVR CARS is brought online. The production EVR CARS modules will be brought online so that the migrated data can be checked by the Member State users.
8. MS users examine the production system data. Member State users will examine the migrated data as it is presented through the EVR CARS system and ensure that all data has been migrated and is correct.
9. MS signs off on the data transfer. When the responsible member of the Member State’s migration team confirms that that the Member State can confirm that the migration has been properly undertaken they will sign to record their satisfaction that the data migrated in complete.
10. EVR CARS goes live. The EVR CARS will be made available for adding additional registrations and the registration information held in the EVR CARS will be the data set used when a user searches for registration records in that Member State.

## Migration plan for Member States not using the sNVR



Figure 2 - non-sNVR migration

Where a Member State is not presently using an sNVR, additional steps will need to be undertaken. These additional steps will be aimed at testing and confirming that the sNVR data set prepared by the Member State is confirmed by the Member State. The MS sNVR test preparation and MS sNVR final preparation phases described below are suggestions for the Member State and should be changed based on the MS’s data, experience and resources. It should be stated that ERA migration work will only support the transfer of data from an instance of an sNVR. In the case of the MS sNVR test preparation phase, the work is expected to be iterative by nature, as is ‘Test phase of the sNVR Transfer’. This is in order that reliable results can be ensured during the production phase. The important element is that the data sent in the sNVR format should be confirmed as being complete in terms of being able to be used in an NVR as this will be assuming during the ERA transfer development and that this can be done in a reliable manner in the least possible time.

### MS sNVR test preparation phase

The aim of this phase will be to provide a means to quickly and reliably populate a sNVR database schema with the data held in the Member State’s present, bespoke, national vehicle registry database. The work will need to be performed by staff knowledgeable in both the structure and data of the existing system and the structures in the sNVR database schema. This is a suggested plan and should not be seen as a requirement. The Member State should ensure that when it is time to move the vehicle registrations to the production EVR CARS, the transfer is done reliably and quickly, to reduce down time of the register.

1. MS prepares an sNVR environment for their transfer. The Member State team installs an sNVR on their environment and ensures that it can be accessed. The sNVR environment should be configured to accommodate any additional data required.
2. MS creates semi-automatic scripts/ application code to move data to a standard sNVR database from their existing data sources. The best way to ensure that the transfer is done in as quick and reliable manner as possible is to use semi- automatic scripts or application.
3. MS extracts their data from their own system into the sNVR environment using semi-automatic scripts /application code. This should be undertaken iteratively.
4. MS confirms the validity of the data in the sNVR environment. The sNVR after the loading should be analysed to ensure that the transferred data is correct. If any errors are found, the error cause should be analysed and all data cleared from the sNVR. If no errors are found, it would be valuable to clear the sNVR and run loading process again to ensure that the transfer process is reliable.

### Test phase of sNVR transfer

Once the sNVR has been created, the development of the necessary tools for transfer between the new, local sNVR and the EVR CARS database will follow the same path as is described in section 5.2.1. with the following activities (see section 5.2.1. for further description):

1. ERA creates scripts/ application code to move data from a standard SNVR database to an EVR CARS database
2. ERA prepares the pre-production environment for the new EVR CARS
3. MS provides a snapshot of the existing sNVR database;
4. ERA installs the existing sNVR on a pre-production system
5. ERA refines the scripts used to transfer the data from the exported sNVR to a pre-production EVR CARS database
6. ERA runs the transfer from the sNVR to the pre-production
7. MS examines the output on a pre-production EVR to ensure the data is correct.
8. MS confirms that the data has been correctly transferred

### MS sNVR final preparation phase

As this phase will cause there to be a block on registration processing, which will only be lifted once the national vehicle registry data is in a live EVR CARS, this phase will only take place on a date agreed between ERA and the Member State. The aim of this phase is to populate a sNVR system which will be the basis for the transfer to the EVR CARS schema. This phase will utilise the scripts and automation tools created during the MS sNVR test preparation phase (see section 5.3.1).

1. MS Freezes the use of their NVR. This should be done after it is clear that there are no ongoing registration or pre-registration processes.
2. MS extracts their data from their own system into the sNVR environment using semi-automatic scripts /application code. This should run in the same manner as during the testing phase to ensure that the data is properly transferred.
3. MS confirms the validity of the data in the sNVR environment. The production phase that will result in the loading of the sNVR data to the EVR CARS environment should only be undertaken once the data in the sNVR is confirmed to be correct and complete.

### Production phase

Once the sNVR has been created, the final phase will be to move the data from the local sNVR to the EVR CARS database, in the same manner as described in section 5.2.2. This phase will include the following activities:

1. ERA installs the production environment for the new EVR CARS and prepares a clean production EVR CARS database.
2. ERA creates the required user accounts for the MS administrators on the production system.
3. MS extracts sNVR data set and provides it to ERA.
4. ERA recreates the sNVR using the extracted schema and data provided by the MS.
5. ERA runs the scripts/ application code to move data from a standard sNVR database to the production EVR CARS database
6. Production system of the EVR CARS is brought online
7. MS users examine the production system data
8. MS signs off on the data transfer
9. EVR CARS goes live.

Following the production phase the EVR CARS for the Member State will be the data set that is searched and presented through the EVR search interface.

# Submission of the sNVR data set to ERA

In order to provide the prepared sNVR data set to ERA, the following options are available:

1. the sNVR data set is to be sent, compressed (e.g. zipped), to the functional mailbox evr@era.europa.eu
2. the sNVR data set is provided to ERA via any sharing method used by the relevant Registration Entity. Details for ERA to download the sNVR data set are to be provided via the functional mailbox evr@era.europa.eu
3. if none of the above options are possible, ERA may provide a secured space in the ERA extranet for the sharing of the sNVR data set. Please request this option via the functional mailbox evr@era.europa.eu, indicating the contact details of the user that would upload the sNVR data set.

# Annexes – sNVR database:

* *snvr.bak*

Empty sNVR database to be used for the migration of data from a custom NVR.

The collations of the views and of the database itself are to be set to *Latin1\_General\_CI\_AS*



* *Create\_sNVR.sql*

T-SQL script for database creation, which allows for the creation of a new sNVR database.

