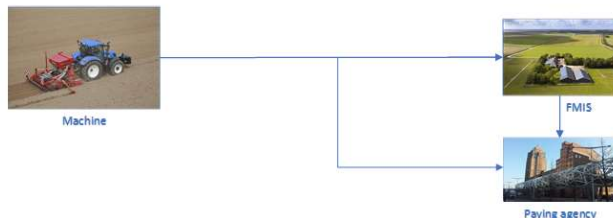


# UC4b Machine data in GSAA as added value data

## Description of the Use Case

This use case explores and applies the use of data from farm machines, **as a new data source for IACS** and as an added value data source for the farmer. This data has a **high positional and temporal accuracy** and can thus serve as a better source to update the farmer’s agricultural parcels in GSAA, preferably in a single message. Secondly, this could be used by the farmer to update his FMIS. These two uses lead to a decrease of administrative burden for the farmer combined with greater accuracy and is a logical building block in a seamless claim implementation of IACS.

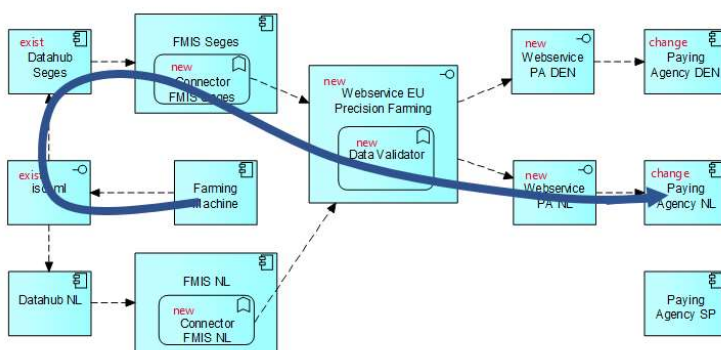


Next to the **reduction of administrative burden**, the direct capture of data at machine level can ensure **increase in quality** when combining this with sector information (e.g. sowing seed). Some measures in current CAP (e.g. mixed seed catch crop) are difficult to

control and are therefore laborious and costly, thus using such machine data could lead to a further **reduction of the administrative costs and reduction of possibilities for errors** for the PA. The state of technology will be assessed. From there a transformation process is designed to enable a single message toward GSAA and FMIS’s. In a second phase the connection of this machine data with the sector information will be developed.

## Innovation in the Use Case

In this information era the access to data is very important. A number of open data sets as the Sentinel data are within reach and are experimented with (UC1a and UC1b). However, this is only a part of the complete data palet. The use of earlier application data is done in UC2 and the use of Aerial photography in UC5a. Data from the farm itself is found in UC1c FMIS data and in this UC4b the data from farm machines are central. The innovation of the farm machine data use case lies in achieving interoperability with machines. In this first stage this is done through a FMIS. The achievement of interoperability is a first prerequisite to use this data. Other steps will be necessary. For example



achieving an assurance for data integrity; data should not be tampered with and data science is necessary to process bulk data from farm machines. In this data lies a lot of knowledge which can be harvested for our purposes.

In the following figure the components and data flow of the first phase in 2020 are depicted.

## Benefits

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Initially this use case was thought of as a means to reduce administrative burden and reduce governance in data processes at the PA. This is still the case but a better understanding of the possibilities of this data is the first yield of this use case.

This use case can become an important building block in performance monitoring. At this moment the necessary indicators in the the new CAP are not set and this will take some years. This use case focusses on building an infrastructure which enables the Payment Agencies to achieve indicators. When data can be collected and when data integrity is assured, the data can be further analysed with artificial intelligence to, in the end, find the desired indicators.

Another reason for the machine data approach is strip farming. In the Netherlands parcels are not big and new farm management techniques like strip farming will make monitoring with Sentinel virtually impossible. This movement to strip farming, set by precision agriculture, from large scale parcels towards more mixed crops is seen as an important step in reducing the use of pesticides by using the natural processes. This can be an important means to reach certain indicators in future.

One topic which can also be addressed is the rigid compliance rules we have today and how it fails to deal with farming practices. Abundance of data and diversity of data and the data science technologies can also be of benefit to farmers. The use of machine data can also lead to a more flexible way of farming where we measure performance instead of rigid compliance rules.

## Involvement of stakeholders

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Four types of stakeholders can distinguished:

- The farmer

The number of farmers is too high to have direct contact. Farmers are in first instance involved through SEGES and ZLTO. They can ensure the farmers requirements and organise the testing; in test situations we will have contact individual farmers.

- The Payment Agency

The Payment Agencies are involved through the structure of the NIVA project. The testing PA's have been briefed on the UC and the steps which are made. The PA's of Denmark and the Netherlands are participant in the development phase; PA's of Spain and Greece are taking part in the testing phase.

- The Farm Management Information System provider

The first FMIS provider which will be linked is the Danish SEGES, partner in this project. In the mean while contacts with other parties are made. Talks with Dutch DACOM has been done and in the coming months others will be approached too.

- The Machine builder



## Deliverable Number and Name

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The population of Machine Builders is big. It is impossible to reach them all. The UC4b team connects to umbrella organisations like Agroconnect, CERN and AgGateway. In these bodies the machine builders are connected to this use case.