



Message from the Management

A look back at 2016 and outlook for the coming year

Dear Customers and Friends,

On behalf of the Agrisoft Systems team I would like to wish you all the best for the new year 2017. As usual, at the end of the year I would like to take the opportunity to take a look back at the most important development projects and milestones of 2016 while also providing a short outlook at some of the things we have planned for the coming year.

One of the main development projects completed in 2016 was a major upgrade of the OMP Fertilizer Planner application (OMP-FP), culminating in the release of OMP-FP version 2.0.2 in October. The new version adds dedicated tools to generate fertilizer recommendations for immature blocks and to handle blocks approaching replanting, complementing the powerful optimization algorithm for mature areas which was already present in OMP-FP version 1.0. The new immature program is based on the idea that fertilizers for immature blocks must be scheduled as a function of months after planting. It is possible to define multiple different immature programs together with rules to determine which families of blocks should get which immature program. In this way, it is easy to tailor the fertilizer program in the crucial immature phase to specific requirements of e.g. different progenies planted on different soil types. The new replanting program works in a very similar manner to the immature program, except that here the user can define a fractional reduction in fertilizer doses as a function of months before replant. Besides the immature and replanting programs,

the new version of OMP-FP also includes numerous additions to the data analysis forms and reports as well as a more flexible and powerful method of defining the monthly distributions of fertilizers in the mature program. Overall, the new additions ensure that OMP-FP provides an end-to-end solution for generating efficient fertilizer recommendations for an entire plantation with blocks in all growth phases.



The first half of the year witnessed the release of two new versions of OMP Plantation carrying version numbers 8.8.4 and 8.8.5. One of the main improvements in these new versions concerns the way planting dates and replanting plans are recorded and displayed in OMP. The new system in particular makes it possible to enter planting and replanting plans in such a way that the OMP Fertilizer Planner can take them into account when evaluating the immature and replant fertilization programs. The pest and disease module also received a significant update, with the possibility of recording pest or disease survey results and control measures without having to assign them to a predefined pest event first. The new versions also include various improvements to the data analysis forms and reports, such as the option of analyzing individual yield components like the average bunch weight or the number of bunches per palm on yield crosstab forms and charts. Furthermore, the updates guarantee the compatibility of OMP with



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the newest versions of Microsoft Access.

In parallel with the work going on in OMP, development on our Banana Management Program (BMP) continued throughout 2016. The main focus of our BMP work was placed on a new module used for field work planning and recording. The new module is based on the idea that nearly all regular plantation upkeep work can be described in terms of standardized jobs which need to be carried at regular intervals in each block in the plantation. In the new BMP field work module it is possible to define as many jobs as desired and to specify the precise labor, materials, tools and equipment requirements for each job. A field work budget is generated by splitting the plantation into multiple different field work groups and then specifying the rotation periodicity and starting cableway for each job in each field work group. The main challenge from a field work scheduling perspective is to ensure that an even usage of labor and materials is achieved throughout the year. The BMP field work budget generator automatically spreads out the cable-

ways over the different weeks of each round in such a way that the total area to be worked in each job per week is as close to constant as possible. The module is completed by powerful data analysis features designed to give field managers the tools they need to review and tweak the yearly field work schedule, to monitor their running progress versus the budget and to plan for the labor and materials requirements of the coming weeks. The new module has entered the final testing phase in December 2016 and should be ready for release in the early months of 2017.

In the second half of 2016 we have also put in a lot of work towards the upcoming new field surveying smartphone app and the associated OMP add-in application, which has also been previewed in more detail in the 18th edition of this newsletter. With this new application, users will be able to define survey questions and survey types in a completely flexible manner. These definitions are then transferred to an easy-to-use smartphone app to allow the data to be collected in the field. Such a system offers various





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advantages, for example the possibility of verifying that the data was collected at the correct locations in the field using GPS localization or the scanning of QR or NFC chips attached to certain palms. Another major advantage is that survey results collected at individual points in the field no longer have to be digitalized and aggregated to block level in a time-consuming and error-prone manual process, as this is handled automatically by the program. The new field surveying solution ties in very well with our other work on fertilizer recommendations and field work planning discussed above, as access to high-quality and trustworthy field scoring data is essential for both topics. As of the end of 2016 the design of the new applications is almost complete and significant portions of the app and the OMP add-in have already been programmed, so completing these new applications will be one of our highest priority goals for the new year.



To complement the various new modules and applications discussed above, in the second half of 2016 we have also begun working on OMP Plantation version 9, which will constitute a major update for OMP and OMP-GIS. OMP 9 will include significant improvements across the board, including additional data analysis features in particular for field diagnostics as well as the addition of multiple new data fields for the capture and analysis of field survey results. OMP 9 will also provide a better user experience than ever before with better multi-language support as well as a modernized color scheme and form layout. We have also completely redesigned the module for system settings, pick-up list definitions and data importing to make things more powerful and flexible yet also more intuitive and convenient for the user. The GIS application has been updated with a completely new menu and users can now specify and save definitions for thematic mapping legends such as mapping ranges and colors directly within OMP. In addition to these improvements which are directly visible to the user, we have been putting in a lot of work behind the scenes to refactor and streamline existing code in preparation for the integration of several of the OMP add-in applications into the main program and for the planned move to an SQL Server back-end database.

For the coming year, our main priority initially will be to complete the various on-going development projects already mentioned above, in particular the field surveying solution and the OMP 9 release. Beyond this, the focus will be on continuing the redesign of the OMP data structure and the migration to the new back-end. More concretely, we are planning to integrate some of the OMP add-ins into the main OMP application, starting with the OMP-HRR add-in for



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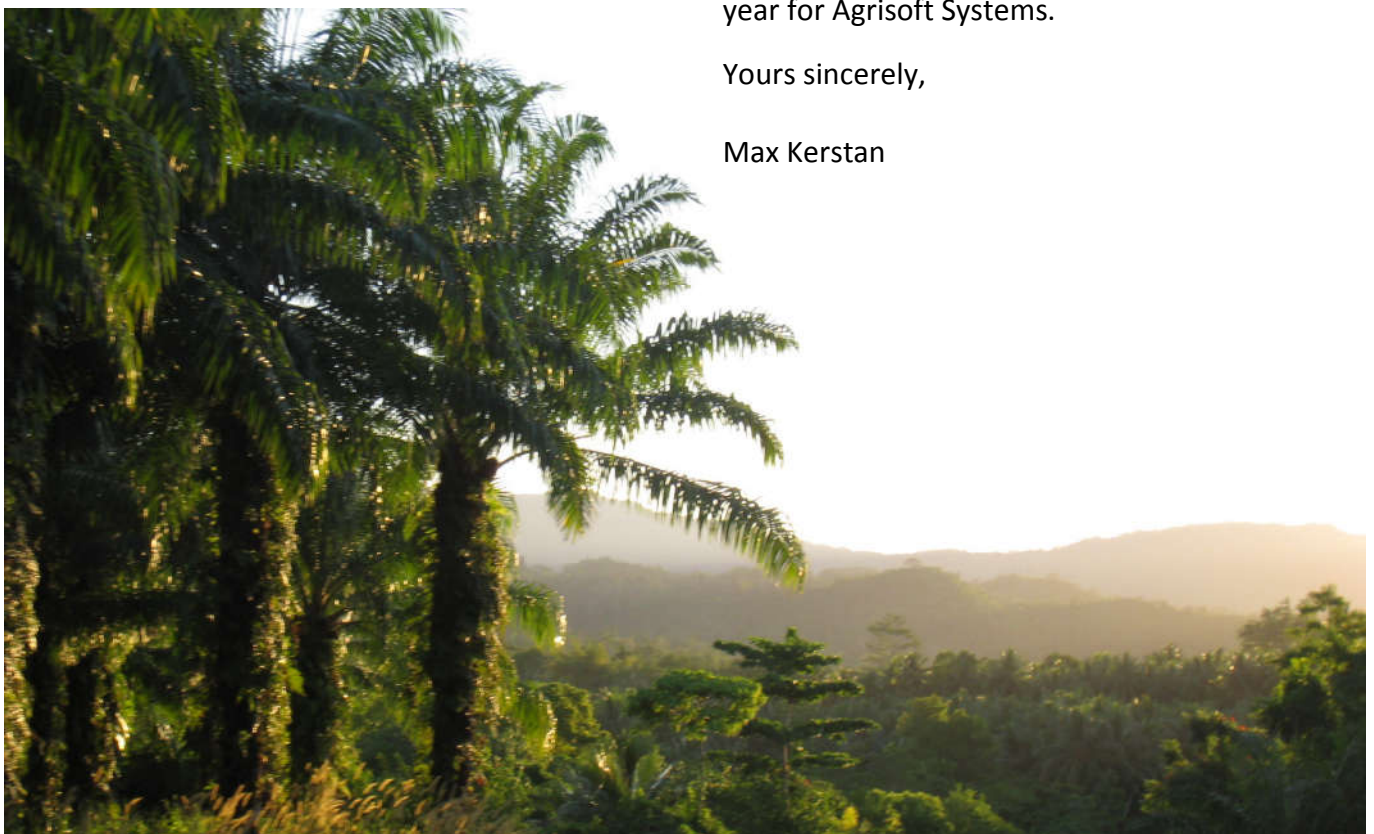
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daily production recording and the OMP crop budget add-in. This will be accompanied by a redesign of the OMP data analysis features for yield and production analysis, with more focus to be placed on budget vs actual reporting as required in the day-to-day field management but also more flexible features for yield gap analysis to rank blocks in terms of their potential and actual performance. We will also continue to move away from the flat year-based data structure by recording field data in a date-based manner, which allows full synchronization with the field survey app. Another improvement planned for the future is to provide support for a more accurate estimate of the number of palms in each block by taking into account palms which have died or been removed since the last palm census.

Outside of the topic of software development, 2016 also marked an important milestone internally for Agrisoft Systems with the takeover of the company by Nina Memenga and myself now finally completely ratified by the Indonesian investment coordination board. This ensures that Agrisoft Systems is on a sound legal footing and that we can continue to look forward with confidence to the coming years. Last but not least, 2016 also marked a successful year for the company in terms of sales with new OMP licenses and license extensions in Africa, Latin America, Indonesia and Papua New Guinea testament to OMP's growing reputation throughout the oil palm growing world. These developments together with the progress made on many new ideas and projects for the OMP and BMP software mean that 2017 promises to be an exciting year for Agrisoft Systems.

Yours sincerely,

Max Kerstan





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From the developers desk

A selection of the on-going developments and plans which are part of our constant efforts to continue to improve Agrisoft products.

OMP 9

- Migration to .acddb and .accde format and support for MS Office 64 bit version
- Redesigned module for defining and editing pick-up list definitions and allowed scores
- New module for importing data from Excel with greatly improved data verification features
- Addition of a large number of new block status fields which can be surveyed with the new OMP Field Survey app
- Improved field diagnostics reports
- New chart to compare YTD yield with YTD yield of previous years, new monthly distribution charts for yield and yield parameters
- Additional climate data recording options including evapotranspiration, photosynthetically active radiation and soil moisture readings
- Unified UI color scheme
- Improved support for Spanish and Indonesian language versions
- Enhanced thematic mapping support

OMP-Field Survey

- New OMP add-in and smartphone app for field data collection
- Flexible definition of questions and survey types
- Possibility of determining survey point locations by manual entry or by scanning QR codes or NFC chips
- GPS-based recording of survey location
- Implementation of data restrictions and lists of allowed scores
- Descriptions for each allowed score to ensure consistent scoring
- Email-based data transfer between app and add-in
- Automatic aggregation of point-based scores to block values
- Support for user-defined expression fields calculated from raw survey data

OMP Plantation medium-term plans

- Integration of daily production recording (OMP-HRR add-in) and crop budgeting into main OMP application
- Calculation of latest number of palms per block based on records of pest and disease control, thinning or palm death since last palm census
- Date-based recording of field scoring results and block status changes
- Migration to SQL Server back-end and implementation of web-based data analysis features