Message from the Management

News from Agrisoft Systems

Dear Customers and Friends,

The main focus for the Agrisoft Systems team in the past three months has been to finalize the long-awaited next OMP Plantation version 10.4. This release is now in the final testing stage, and we can realistically expect it to be ready for roll out in a month or so. The most significant development in the new version is a new module for planning and monitoring of field work as well as resource usage. A more detailed preview of the changes and additions in the new version can be found in the feature article of this newsletter.

Of course we have also been working on various other projects alongside this release. One big project concerns AI-based analysis of drone or satellite imagery for more accurate palm censuses. This will provide a range of possibilities and advantage, and was already covered briefly in the previous version of this newsletter. Another significant project is to provide some back-end APIs to make it easier to implement automatic data transfer from other database systems into OMP. We are currently developing this in close collaboration with one of our customers who is implementing a new ERP system and would like to support the integration

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with OMP from the start. However, many of the changes and APIs are very generic and will no doubt be useful to other customers as well in the future. As part of this implementation, we have had to recode various parts of the data recalculation routine (which was previously coded in the OMP front-end) directly in the OMP back-end. This in itself will also provide a range of advantages, for example better speed in cases where the connection between front-end and back-end has limited bandwidth. More importantly, it paves the way for improving the synchronization between daily and monthly production data tables in OMP without requiring a manual press of the data recalculation button in OMP-HRR.

Away from development, a very important event was the TCCL Yield Intensification workshop in Wye at the end of May. It was a great week with a wide range of very interesting presentations on topics ranging from how to measure animal biodiversity in oil palm plantations to oil palm fertilization and nutrition. Besides presenting our software, the workshop gave me the opportunity to finally meet in person a large number of people who I had previously only communicated with via E-Mail or what's app. The talks and discussions also gave us many valuable ideas for possible future improvements and alterations to make in OMP.

As mentioned above, the main feature article of this newsletter provides a more detailed preview of the upcoming OMP Plantation 10.4 release. The "What's new" section at the end of this newsletter provides an overview of some of the topics we are working on.

Warm regards,

Max Kerstan

Feature

Preview: OMP Plantation 10.4

In this article, we provide a preview of some of the changes and additions that you can look forward to in the next upcoming release OMP Plantation 10.4. As usual, our customers with active maintenance and upgrade agreements (MUAs) will receive this version upgrade at no additional cost.

Undoubtedly the largest change in the new version of OMP Plantation is the addition of two closely related new modules, focusing on the details of field work and resource usage. The goal of the modules is straightforward: to generate a work schedule and resource use budget that can be used for planning ahead, and then providing the means to monitor and track the actual work done and resources used vs the schedule/budget.

The fundamental concept of both modules is the concept of a "field work job". You can define as many separate field work jobs as you want and group them into categories and subcategories. For each job, you can define expected resource usage rates on per ha, per palm or per block basis (see figure 1).

Resources are grouped into the four categories Labor, Fuel, Material and Equipment. For each category, the individual resource items can be defined in the OMP picker definitions. Examples of each category might be normal and skilled worker mandays for Labor, diesel for Fuel, gravel for Material and a tractor for Equipment.

Typical examples of normal field work jobs are pruning, circle weeding or road maintenance. In

Figure 1: Field work job definition screen.

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addition to these "normal" jobs, you can define special jobs either related to harvesting with a specific harvesting method, or applying fertilizer with a certain application method, or applying pesticides with a certain application method. For these special types of jobs, there are additional options for the definition of resource use rates. For example, for harvesting jobs usage rates can be defined also per t of FFB, while for fertilizer application the rate can be defined per t of fertilizer.

Once you have defined the list of field work jobs, the next step is to define the work schedule. Note that for special jobs like e.g. fertilizer application the schedule follows from the fertilizer recommendations which already exist in OMP, so the work schedule only needs to be defined separately for "normal" field work jobs. The work schedule is defined on a monthly basis, by specifying the number of ha to cover by job code, block and month. If you already have this data available, you can enter it directly on a new data edit form or import it from Excel. However, if you don't have field work schedule already available then OMP Plantation 10.4 also includes special tools to help you generate a field work schedule.

To generate a work schedule, the first step is to assign each block to a "Field work unit". This refers to a group of block that require similar field management with the same kinds of jobs. For example, young immature blocks could be grouped in a different field work unit than mature blocks because they will have different upkeep requirements. Next, for each field work unit and each job, you can define how many rounds

should be done (i.e., how often the job should be carried out in each block in one year), and when the rounds should start and end. Figure 3 shows an example for two rounds of pruning, the first round in Jan-Feb and the second in Jul-Aug.

Figure 2: Round definition details for selected job

The left part of the form (figure 4) provides an overview of the round scheduling, making it easy to review that field work is spread out appropriately over the year, peak crop or very rainy seasons are taken into account accordingly etc. Once you are happy with your definition of work rounds for each job and field work unit, you can let OMP generate the block-by-block schedule. Essentially, OMP will strive to even out the work load over the months in the round. So for example if the duration of a round is 3 months, then OMP will schedule roughly 1/3 of the overall area of the field work unit into each of the months. The order in which the blocks are scheduled is controlled via the "Field upkeep index" field that you can enter for each block.

The data entry for actual field work carried out is relatively straightforward. Simply put in the

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Figure 3: Round definition overview

number of hectares covered by date, block, job and work team ID. While you can in principle enter this information directly in OMP, most likely you will want to either import it from Excel based on data from your payroll system, or even create an automatic data link from the payroll/ ERP system into OMP.

On the viewing side, the new version includes two new data analysis forms and associated print reports to allow you to monitor the field work progress versus the budget and keep on top of any delays. As usual, you can choose from a variety of different grouping levels. The monthly actuals vs schedule form is shown in figure 4.

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The budget for resource requirements for "normal" field work follows directly from the field work schedule described above, by multiplying the scheduled ha in each block and job by the resource usage rates defined in the job definitions form (figure 1). In addition, OMP calculates the expected resource use rates for harvesting based on the definition of harvesting jobs, the crop budget and the default harvesting method entered for each block. For fertilizer, mill residue or pesticide application, the resource budget is similarly calculated based on the monthly recommendations multiplied by the resource use rates as entered in the job definitions. In this way, you can get an estimated budget for essentially all in-field resource usage.

For the data entry of resource use actuals, the main special feature is that the data entry level is variable by record. In some cases, you may know exactly how much of a specific resource was used for a specific job in a specific block (e.g. the detailed number of mandays by block and job is probably available from the payroll check roll). In other cases, this could be much less clear, e.g. diesel fuel may be issued to trucks and tractors at division label and those vehicles could be used for various tasks. In that case, it may not be possible to accurately assign the partial diesel usage to individual blocks and jobs. The new data entry form provides the flexibility to enter the available information for each record and also simply leave those fields that are not known. Of course, the information can also be imported from Excel.

The data analysis for resource use again focuses on monitoring the actual usage vs. the resource use budget. Figure 5 shows one of the data analysis forms. Different options are available for grouping, subgrouping and restrictions.

While many plantations will already be able to

Figure 4: Data analysis form for field work actuals vs schedule.

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Figure 5: Actual vs budget running totals for resource use.

view the actuals for field work done and resources used quite readily from their ERP systems, we are sure that the new OMP modules will be useful for planning and scheduling and to provide additional monitoring tools. We also already have various ideas for improvements and additions in future versions, for example additional schedule reports and the option of viewing the resource budget in financial terms of rather than physical inputs. It may also be interesting to be able to easily compare resource usage rates (e.g. mandays / ha) for different job types versus different agronomic parameters such as topography or palm age.

Of course, the OMP Plantation 10.4 release will also include a variety of other improvements and changes. For example, the fertilizer data analysis forms and reports have been extended with a number of additional grouping options and the option to display differences between actuals and recommendations in %. We have also added a complete new set of forms and re-

ports that display the application and recommendation in terms of nutrients rather than fertilizers. This can be particularly useful where there are multiple fertilizers contributing the same nutrient. The form and report for monthly/ YTD production now also support twelve month running total (12MRT) values for the most important parameters, as well as the option of a second sub-grouping level. In OMP-GIS, we have added new maps for soil deficiency parameters as well as the option of storing background layers within the OMP back-end database. As usual, users will receive a "What's new" document that provides a more complete list of changes as part of the upgrade process.

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.

Interfacing with ERP systems

- Change log tables where the external systems can push a log of changes to reproduce in OMP (records added, deleted or updated)
- Triggers and stored procedures in the back-end to handle updating of all dependent tables
- Support for pushing daily production, fertilizer and application and pesticide application data
- Updating of key master data (block lists, block areas, fertilizer names,...)
- Automated handling of OMP data update with no regular human input
- Handling for OMP data locking, process to repeat when the OMP table is no longer locked

General improvements

- New report combining actuals for past months, BBC crop forecast for the next few months and normal crop budget for the rest.
- On the report soil conservation analysis, add option to choose which of the pests or diseases should be included.
- Summary by year on water supply report
- Subgroup chooser option on DA form "Production by parameter"
- New spatial level "suPlantation" between the division and estate levels
- New charts for optimum and critical leaf levels
- New point type "Row" for field surveying
- Improve the estimate of the availability of key mill residues from crop budget

Integration of daily and monthly production

- Automatic updating of aggregated monthly data when any daily production data is entered
- Implementation via back-end triggers requires no manual action by the operator
- Support for primary data entry either at monthly or daily level
- Handling and special data migration as part of the version update.
- Addition of a new system setting to choose whether the monthly harvest round length should be based on average or maximum of daily harvest rounds.