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Welcome to the 6<sup>th</sup> issue of the Greycon newsletter; GreyLetter. Checkout our latest press release below: **BOPP Producer Tatrafan Selects Greycon to Improve Production Efficiency**

Editor: Mari Nisbet, Greycon Marketing Manager

## BOPP Producer Tatrafan Selects Greycon to Improve Production Efficiency

Greycon were appointed by Tatrafan to implement a trim optimisation solution after a careful evaluation of the current slit optimisation system at Tatrafan's plant in Svit, Slovakia. Tatrafan is a BOPP (Bi-Oriented Polypropylene) packaging film producer part of the Terichem Group and produce 17,000 tonnes of packaging film per annum.

After a successful pilot where some of the benefits from Greycon's solution included; reduction of trim waste and optimisation of knife changes. Tatrafan could see the benefits to implementing Greycon's trim optimisation solution, X-Trim. X-Trim was integrated with Tatrafan's Enterprise Resource Planning (ERP) system, SAP.

Jari Kaukiainen, Sales Manager for EMEA states; *"Tatrafan represents a great example where the benefits became obvious through a small pilot project before the implementation. This is one of those supercool aspects with the X-Trim solution, as it is possible to run X-Trim as a stand-alone solution for a period and afterwards integrate it seamlessly with SAP, showing Tatrafan a significant improvement almost from day one."*

*"We were very happy to continue on from the successful pilot project and move Greycon's state of the art optimising tool into daily production at Tatrafan. It is the combination of the various efficiency improvements such as waste minimisation, optimisation of knife*

*changes, minimisation of number of patterns as well as managing different winder types combined with the easy-to-use trim solution which make a difference in Tatrafan's daily production processes"* comments Martin Lach, Managing Director at Tatrafan.

### About Tatrafan/Terichem

More than 80 years of tradition of packaging film and BOPP film production in Slovakia and Finland created the foundations on which Terichem was built.

Terichem is the joint venture of Finnish company Ab Rani Plast Oy and the Slovak company CHEMOSVIT, a.s. with production sites in Slovakia, Finland and Ukraine.

For the last 20 years Terichem has been operating successfully in the global market of BOPP film manufacturers and suppliers under the brand TERICHEM.

Since 1.1.2017 Terichem operates in the market of BOPP film for packaging of tobacco, food and other products under the brand TATRAFAN. The division for BOPP film for production of capacitors is separate and operates today under the brand Tervakoski film.

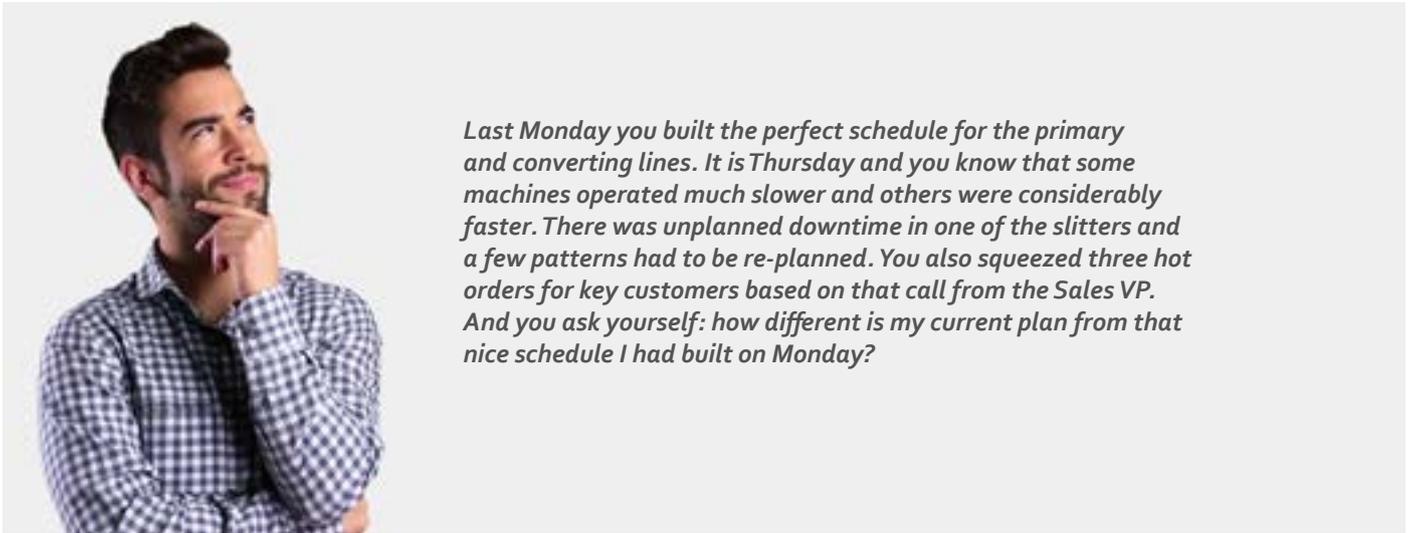
[www.terichem.sk](http://www.terichem.sk)



TATRAFAN  
FILM  
FINESSE IN PACKAGING



# Plans change all the time – measure adherence with opt-Studio



With opt-Studio you can compare the current plan with a baseline schedule built a few days ago. The system will remember the scheduled date of each task and the estimated delivery date of each orders. As the schedule evolves, tasks and orders move around but the baseline data will remain fixed to allow comparisons.

Questions like these can be answered immediately:

- What was the original end date of this task?
- Which tasks have been delayed more than 6 hours?
- What are the new tasks that have been squeezed in the frozen section?
- Which orders have been delayed by more than 2 days?

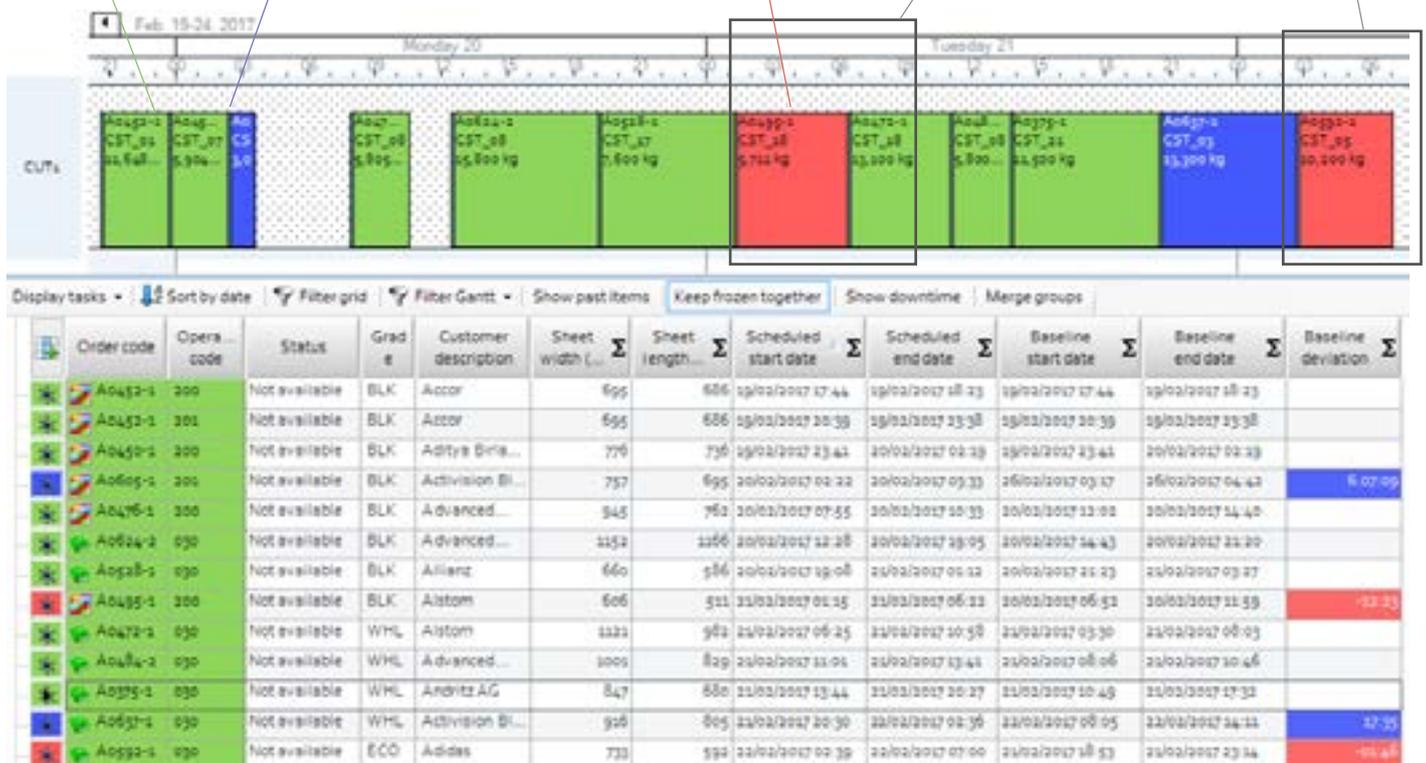
Tasks in green are the ones that have not changed much (within a configurable tolerance) from the baseline.

Blue ones are made earlier.

Red ones are delayed.

This contains the dates in the current plan and the dates in the baseline.

This column shows the deviation for each task.



# Greycon claims coveted Keynote Speaker slot at OR Society Annual Conference 2017

Constantine Goulimis, CEO at Greycon will be one of the Keynote speakers and will be presenting their paper KBP: A New Pattern Reduction Heuristic for the Cutting Stock Problem at the upcoming OR Society Annual Conference (OR59).

OR59 will be taking place on 14 – 17th September 2017 in Loughborough University, UK. There will be plenary speakers, keynote speakers, around 200 paper presentations in streams ranging from analytics to transport, the unique practitioner/academic collaboration

sessions, a varied social programme plus much much more.

Constantine will be presenting experimental results for two variants on a new type of heuristic, which is computationally cheap and nicely complements previous ones. Greycon found through research that the classic one-dimensional cutting stock problem exhibits a great deal of degeneracy, in that multiple solutions with the same waste level are possible.

To find out more about OR59 or to book your place to see Greycon's presentation please visit: [www.theorsociety.com](http://www.theorsociety.com)

## About OR Society

Founded over 60 years ago in succession to the Operational Research Club which was set up in 1948, The UK's OR Society is the world's oldest-established learned society catering to the Operational Research (O.R.) Profession, and one of the largest in the world, with 2,700 members in 66 countries.

[www.theorsociety.com](http://www.theorsociety.com)

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## Greycon's Spotlight on Alberto Moroni, Amcor Venturina

### Tell us a few words on your personal life.

I have two children. A ten year old and six years old. I have been married now for 3 years to my beautiful wife. Originally I hail from the north of Italy.

### Do you have any special interests outside of work?

I enjoy jogging. And most recently I have been running half marathons. Which gave me an idea to build a strong team with my work colleagues and we can see who is the best runner in Amcor!

### What is your history at Amcor and could you give a brief outline of your key responsibilities?

I have been with Amcor since 2011. I joined Venturina as a General Manager just after it was acquired by Amcor and re-branded as Amcor Venturina. One of my first tasks was to implement a new management system with state of the art technology and build a management team. In the last five years we have grown by 25% and we continue to do so.

### What interactions have you had with Greycon throughout your career at Amcor?

One area of the business we wanted to improve was to implement a new management planning system and optimisation of the machine production. We wanted to reduce our waste but at the same time increase our output. The challenge for our big machines (4.5metres x 800ml x 2000ml) is combining all of the thickness of the material with the capacity of our machine. This is hard to do without support of a strong software tool.

We met with Greycon to design a system capable of creating different scenarios, prioritising the needs of the company and reducing trim waste. Thanks to Greycon we are now able to have a clear vision of how we can match our capacity and establish the planning decisions according to the priorities of the company.

I was also tasked to improve the knowledge of the Capacity Planning department. I employed Greycon as Consultants to teach our team new ways to plan.



**Alberto Moroni**  
Plant General Manager  
Amcor Venturina

Amcor is a global leader in responsible global packaging solutions supplying a broad range of rigid & flexible packaging products into the food, beverage, healthcare, home and personal care and tobacco packaging industries

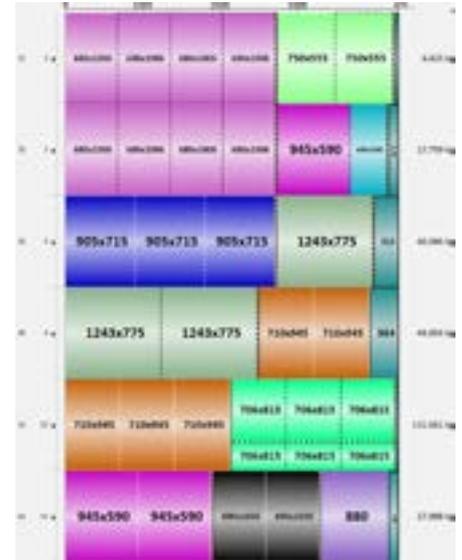
# Greycon's Technical Corner

## A look ahead to X-Trim v9.2

Long-time X-Trim users may recall an algorithm that was available called the Landau algorithm. This was designed as a heuristic for a client who had a specific problem: very little space between the board machine and the sheet cutters. As a result of this space limitation, it was considered desirable to only allow limited splitting of the orders in host parent reels, so that you did not end up with lots of parent reels containing the same order. This algorithm, experimental and never truly battle-hardened was retired after the adoption of the Gurobi library. Cut a long story short, circumstances offered an opportunity to resurrect this algorithm and this will be released with 9.2 in October 2017. Here's a solution generated by this algorithm with 5.123% waste:



With 9.1 we introduced a new possible constraint for sheet orders: the ability to limit the number of appearances of an order in different host parent reels. We can compare this solution with the Landau approach: Using this constraint (for smaller orders) in conjunction with the KC algorithm to limit the pattern count to 6, generates a solution with 4.284% waste for the same problem:



There are several details that make this comparison less straightforward. But with 9.2, X-Trim clients will have the opportunity to experiment with the Landau algorithm again.

## CPU Update

In Q2 2017 AMD, re-entered the high-powered desktop CPU market with the Ryzen 7 family of processors. These provide a higher core count at a significantly lower cost. Of the early releases, the Ryzen 7 1700X with 8 cores at US\$ 330 has caught our eye, although we have yet to benchmark it ourselves. Further announcements from AMD are expected in Q3 2017 to flesh out this offering, including a server family called Epyc that will replace the (very power efficient, but quite poor at running Greycon applications) Opteron family.

In a rapid response, Intel announced its own new generation of CPU's, for both the desktops and the server market. The desktop family is labelled "Intel Core X". The two entry models should be ignored, they are not that different from previous-generation Kaby Lake CPU's. The next 3 entries use a new architecture called Skylake X and models are available with 6/8/10 cores at around US\$ 385/590/1,000. Of these, the first model (Core i7 7800X) is the one that Greycon would recommend because, although it has a lower core count than

the rest, the base frequency at 4.0 GHz is the highest (also, we have yet to see a massive benefit from more than 6 cores on a single-user desktop environment).

The second strand of the Intel announcement is a new generation (and naming convention) for the Xeon server chips. These are named Bronze / Silver / Gold / Platinum (plus a 4-digit number) as you add in features such as socket support, cores and frequency. For instance, the most basic Xeon is a Bronze 3104 (6 cores / 1.70 GHz / US\$ 220), the upper-middle of the range is the Gold 6150 (18 cores / 2.70 GHz / US\$ 3,360) while the flagship model is a Platinum 8180 (28 cores / 2.50 GHz / US\$ 10,000 – yes the price is not a mistake). The consensus among the technical community is that these new server chips provide a +25% performance improvement for the same cost compared to the previous generation.

Thank you for reading, if you have any comments or questions regarding this current newsletter or future editions please do not hesitate to contact us.

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