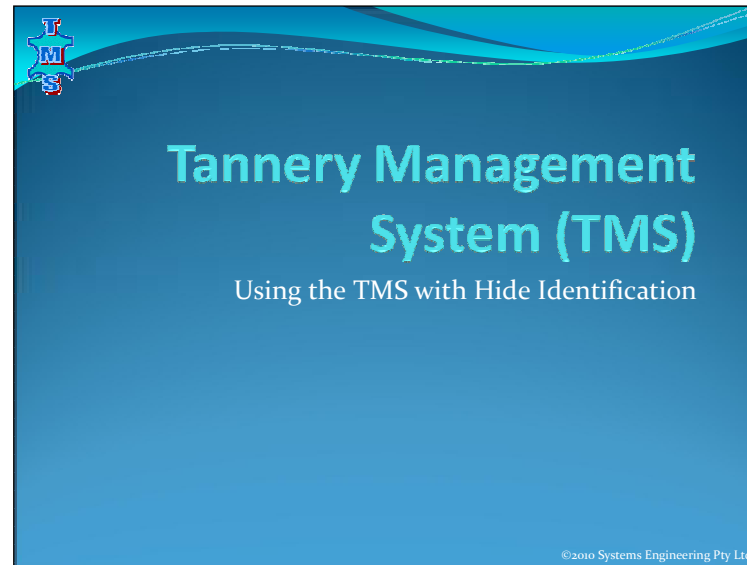This presentation will introduce the Tannery Management System (TMS), and show how it can collect Hide Identification and other Hide source data. It also provides an overview of the general capabilities of the TMS.

The TMS is a product of :

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Tannery Management System

What is the TMS?

- The TMS can help you track, grade, process and manage hides and skins from the time they are received to when they are shipped.
- The TMS can record hides at an individual hide or a Batch level basis.
- The TMS can provide full traceability back through production processes to when it was received, and with Hide ID back to the source from which it originated.
- The TMS provides comprehensive Production reporting and complete Inventory Management.

Complete start-to-finish Tannery Management

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•The TMS has been designed to track skins/hides from the time they are received green or salted into a Tannery to when they are dispatched as finished goods.

•Any information that is important to your business can be recorded at the individual hide or batch level. Even if you do not want to grade/weigh individual hides through a fleshing system, the TMS can still record that a fleshing batch has been processed and the batch had certain quality attributes such as hide temperature , bacteria count etc.

The TMS supports multiple user-defined species, and you can collect the data you need appropriate to the species.

•The TMS supports all the major processes in a tannery such as fleshing, short-term preservation processes, tanning drums, sammying and splitting. While the TMS can track and control the hides beginning to end, if a tannery only wants to implement sammying the TMS can effectively be used to simply record product processed at the sammyer and maintain tight inventory control without having to record any information about the processes leading up to sammying.

Using the full capabilities of the TMS provides process traceability should a quality issue arise at the sammyer or, indeed, many months or years later when a customer complaint is received. Using standard TMS reports, it is possible to trace the origin of each hide on a pallet in terms of tanning batch, short-term preservation batch, fleshing batch and receival batch. The TMS' quality records at the batch level can be reviewed to see if there may be valid reasons for a customer complaint. The traceback facility can be further enhanced if individual hide identification is used.

•The TMS is provided with a wide variety of reports, that show production, inventory, quality and shipping information, each with selection criteria to enable the user to focus on the information they want. The TMS is capable of storing 10's of millions of hide records so even years after the event, the processing history of any hide can be retrieved and associated with the quality control history of the batches from which it was processed.

Tannery Management System
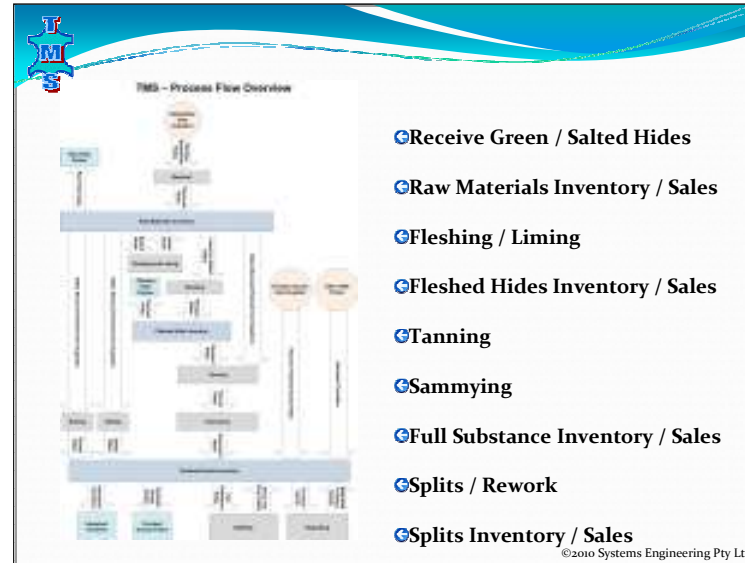
🔘**Receive Green / Salted Hides**

🔘**Raw Materials Inventory / Sales**

🔘**Fleshing / Liming**

🔘**Fleshed Hides Inventory / Sales**

🔘**Tanning**

🔘**Sammying**

🔘**Full Substance Inventory / Sales**

🔘**Splits / Rework**

🔘**Splits Inventory / Sales**

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Raw Hides Inventory
➢Raw Hide Inventory maintained at the pallet level.
➢Record hides received – physical and/or estimated.
➢Full range of supplier identification information.
➢Apply multiple quality observations.
➢Maintain inventory of hides received at the PUN level.
➢Retrieve and review history of receivals.
➢Can receive any type of product.

Tanning
➢Once fleshed, hides may be allocated to tanning batches.
➢Tanning batch numbers can be either automatic or manually created.
➢Specify the tanning recipe to be used.
➢The MS identifies and warns of hides outside the expected profile for the recipe, e.g. incorrect weights, incorrect raw hide type etc.
➢Lists all bins in inventory available for tanning.
➢Any number of bins can be selected and allocated to any batch.
➢Bins allocated to a batch can be unallocated as needed.
➢Apply multiple, user defined attribute information to any tanning batch.
➢Full history of each fleshed hide PUN is maintained, e.g. date created, short-term preservation (if any) recipe used etc.
➢System can calculate tanning processes run sheets, e.g. what chemicals to add at what time.
➢Chemical usage report per batch or group of batches can be generated.

Wet Blue Inventory
➢Once allocated to a tanning batch the fleshed hides are automatically removed from fleshed hides inventory.
➢Wet blue Inventory maintained at the individual hide level.
➢The TMS keeps track of the work-in-progress position, i.e. hides in tanning but not yet sammyed.
➢Creates and maintains a batch control for grading hides through a Sammyer, splitter or regrade station.
➢Hides can be allocated directly into tanning batches from raw material inventory, e.g. purchases of prefleshed hides
➢Full range of supplier identification.
➢Batch determines Grading Profile: what data is collected for each hide and Packing Profile: how each hide should be weight ranged and packed and Objective Grading Profile: how a grade is calculated from individual hide attributes.
➢Apply multiple, user defined attribute information to any batch.
➢Number of terminals to use and data collected is defined by the grading profile.
➢All user data entry is validated before being accepted.
➢Multiple terminals can be grading the same hide at the same time.
➢The range of hide attributes that can be collected is user defined and unlimited.
➢Wet Blue Inventory can incorporate bought in wet blue hides.

Fleshed Hides Inventory
➢Fleshed Hide Inventory maintained at the individual hide level.
➢Creates and maintains a batch control for grading hides through a flesher.
➢Full range of supplier identification per batch.
➢Batch determines Grading Profile: what data is collected for each hide and Packing Profile: how each hide should be weight ranged and packed.
➢Apply multiple, user defined attribute information to any batch.
➢Record trimming recovery information for each batch.
➢Allocate hides from raw materials inventory into fleshing batches.
➢Once in Inventory, hides that will not be processed further can be sold to third parties.

3

Tannery Management System
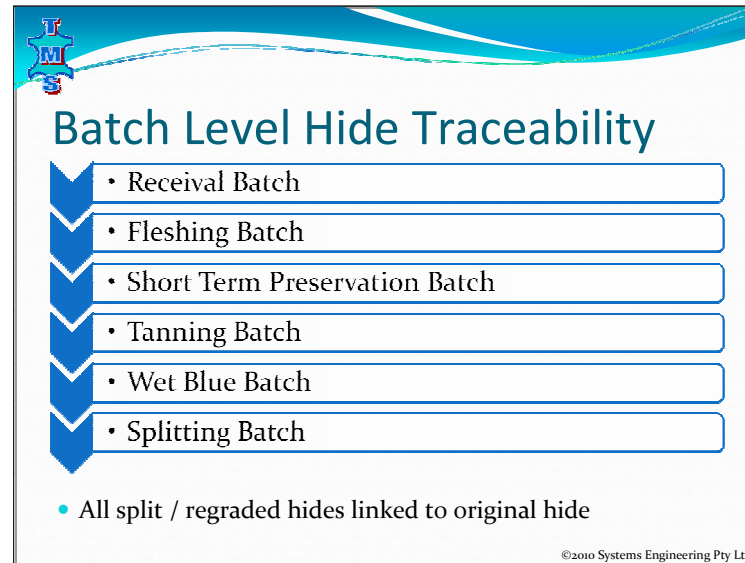
In the TMS all hides are processed in batches which feed into other batches further along the process.

Even without an individual unique hide ID it is possible to trace hides via the processing batches they were associated with.

For example, the TMS could collect just Batch Level information for Receival, Fleshing, Short Term Preservation, and Tanning, with individual hide information for the Wetblue batch (Grading at the Sammyer) without individual Hide ID. We could then trace back from a Wetblue (Sammying) batch, to the Receival batches that supplied hides to the Fleshing batches, that went into the Short Term batches and into Tanning batches that eventually went into the Wetblue batch.

With a hide ID (as described later) individual hides can be identified in many different ways. The example in this presentation shows a hide ID that can describe the Abattoir, Kill Date and Kill Sequence Number of any hide. This gives a high degree of traceability over and above batch level linkages.

Once we have an individual hide recorded in the TMS the batch it originated from forms part of the record, and automatically provides a linkage back from any batches where it is further processed. For example, if we Regrade or Split a hide, the connection remains to the original hide and its batch, and from that we can trace back through its constituent batches.

Tannery Management System

Grading

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This shows a simple implementation of Grading at a Sammyer.

The TMS supports individual hide grading at several points in the Tanning process, at a Flesher, Brining/Salting area, at a Sammyer, at a Splitter or a Regrade area. Such a position, where the TMS is used for individual hide grading is referred to as a Station. A Station may have one operator collecting all the information on a hide, or there may be multiple operators working together to collect information on a hide. Each operator will use a Terminal on the Station.

Here we see a single operator grading on the dry-side of a Sammyer, but the grading could be done on the wet-side, or by two operators, one on the wet-side, one on the dry-side. The TMS can work how you want it to.

Tannery Management System

Fleshing / Splitting / Sammying

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Photos of TMS in use at:

Flesher

Splitter

Sammyer

Tannery Management System

Grower: The farmer that raised the animal from which the hide was obtained. This source level is important for recording items such as medical certificates, or place of origin certificates.

Supplier: The entity from whom the hide was purchased (could be a skin/hide trader or simply the Abattoir)

Abattoir: The establishment that slaughtered the beast and removed the skin/hide (often the same as the supplier). Supplier/Abattoir sources are often used to reconcile hides received with accounts payable, and to perform yield calculations.

Operator: The owner of the hide (particularly relevant in a contract tanning operation, Inventory is separated by Operator)
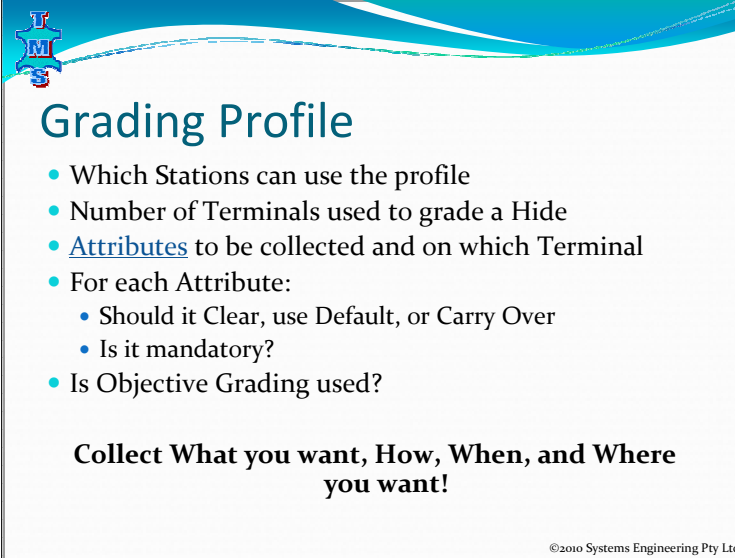
Tannery: The tannery that processed the hide (particularly relevant in multi-plant tanning operation, for producing consolidated production and inventory reports)

You can use as many or as few of these sources as you need

e.g. This hide came from a cow raised by Farmer Jones, for the Smith Meat Supply Company, contract killed by Tom's Abattoir, with the hide purchased by Dick's Leather Suppliers, for whom the hide was contract wet-blued by Harry's Tannery.

With this source information the TMS is able to provide extensive reporting of hide quality by source.

Grading Profile

- Which Stations can use the profile
- Number of Terminals used to grade a Hide
- Attributes to be collected and on which Terminal
- For each Attribute:
  - Should it Clear, use Default, or Carry Over
  - Is it mandatory?
- Is Objective Grading used?

Collect What you want, How, When, and Where you want!

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A Grading Profile defines the way Grading will be done. The Profiles are completely user definable and the TMS supports an unlimited number. When entering a processing batch, a Profile is set by the supervisor, so all the shop-floor grader need do is select the batch to process and the TMS automatically configures itself to grade according to the supervisors instructions.

A Grading Profile can be limited to being used on a particular Station, or type of Station. It also defines the Terminals used for the Profile.

The Grading Profile specifies the Attributes to be collected on each Terminal, the Order in which they are presented, whether each must be entered, and what value should be initially presented for each new hide.

An attribute where there is no similarity between consecutive hides can be cleared for each new hide, If each hide is usually similar to the last, the last value can carry over, or if nearly all hides will have the same value, a default can be used .

Each Hide recorded in the TMS must have a Grade. There is a Grade Attribute that can simply be added to a Grading Profile, and entered as any other Attribute, however it may be that through evaluation of the scores for other attributes, a Grade can be deduced. This is called Objective Grading, and an Objective Grading Profile which details the Attributes it uses and the way it combines them to determine a Grade can be assigned to a Grading Profile.

Some examples of the Use of Grading Profiles:

Grading may normally use a profile with very few Attributes collecting basic information, but a Grader sees that the current batch seems to have a lot of unexpected damage. He can change the profile so that more Attributes are collected for the rest of this batch.

It may be that some hide suppliers put Hide IDs on the left flank of the hides, while others stamp on the right flank. If there is a terminal on both flanks of the hides as they are processed, and the batches are separated by left flank, and right flank ID hides, selecting a "Left Flank" or "Right Flank" profile will ensure that the ID Attribute is collected on the correct side so the operator can see it on the hide.

Tannery Management System

Attributes

- Used for Hides, Batches and Orders
- Easy to Modify and Add
- Allow validation of entered Attribute score
- Supports Special validation or Parsing
- Allows reasons for the Attribute's score
- Supports Objective Grading

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The TMS uses Attributes to record information about individual hides, as well as Batches and Orders.

Attribute Definition are divided into two types, a small number which have a particular meaning and purpose in the TMS, and an unlimited number which are user defined. It is very easy to add and modify user defined Attribute Definitions to support changes over time in the data to be collected, or sudden new requirement.

The types of Data that an Attribute can contain are:
•Lookup, a list of possible choices with a unique data entry code for each.
•Number
•Date/Time
•Yes/No
•Specially validated text, with the pattern used to validate it.
Each Attribute is validated according to the type of data it contains

Lookup Scores may have an associated reason for the score also as a lookup. A score of "Poor" for Attribute "Cuts", could be qualified by a choice between Reasons of "Flesher" or "Abattoir" to define who caused the cuts.

Attributes may be used in Objective Grading, by setting parameters against the possible Scores.

Using Attributes allows for easier searching and analysis at a later time than a text comment.

Tannery Management System
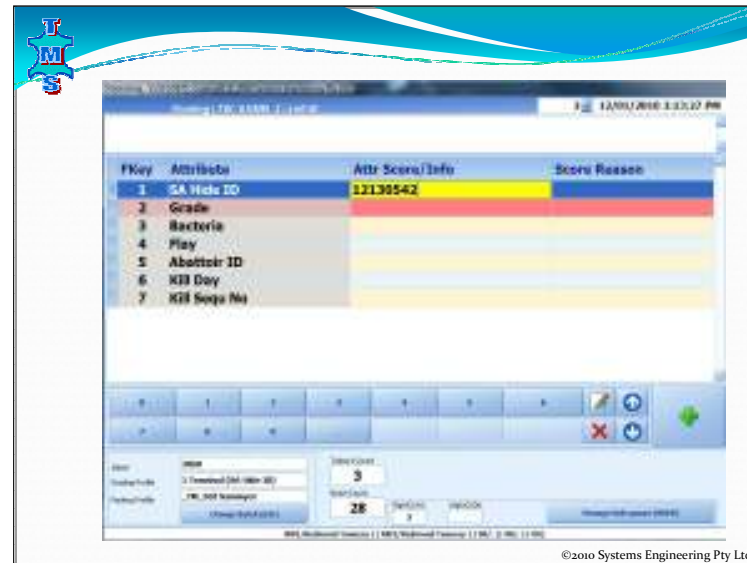
For the purpose of this presentation we will concentrate on Sammyer Grading, as this is the first place that a Hide ID punched onto a hide can be read, and entered into the TMS.

This shows the Grading form in use at a Sammyer using a single Terminal Grading Profile which allows 7 Attributes to be collected for each hide, the mandatory ones have a red background.

Navigation between attributes is automatic, but can be overridden using Up/Down Arrows or jumping via a Function Key, although it is not possible to navigate from a mandatory Attribute until it has a valid value.

Data entry is via Touch screen or keyboard. A mouse is not needed for grading. The band of buttons labelled "0" to "9" & ".", with other symbols on the right are the means of entering data on a touch screen. The value for this Attribute is numeric so the buttons are set appropriately.

Here the value of "12130542" is entered for the Attribute "SA Hide ID".

"SA Hide ID" is a special Attribute which is associated with an ID Style which defines the construction and parsing of the ID. In this instance the style defines the ID to be made up of 3 components, a 2 digit Abattoir ID, followed by a 2 digit Kill day, and a 4 digit unique Carcase ID (kill sequence number)

As soon as the final 2 is entered the TMS knows the last digit has been keyed and automatically parses the ID and displays the component parts into their associated attribute lines.

Tannery Management System
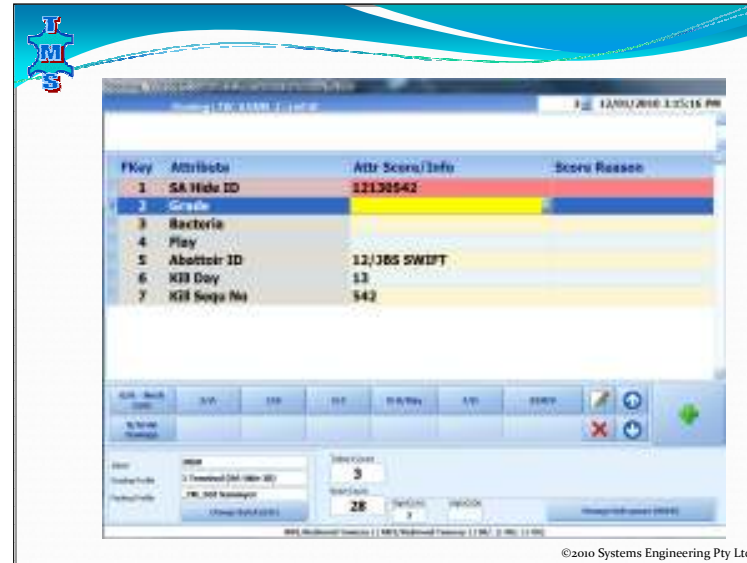
The information parsed from "SA Hide ID" Attribute is automatically placed in the appropriate Attribute lines.

The focus automatically moves to the next Attribute line for data entry.

Note the touch screen buttons have now been relabelled. Grade is a lookup Attribute, so now it shows each valid grade, for the Packing Profile in use, as its data entry code followed by its description. Even when not using a touch screen this is useful as an aid to remembering the data entry codes.

Tannery Management System

A grade code of 3 is entered and the focus has automatically moved to the next Attribute line

The touch screen buttons have been relabelled for Bacteria scores.

Tannery Management System

The Down Arrow was pressed to skip the Bacteria entry. Pressing F4 while in the Bacteria Attribute would have also moved the focus to the Flay attribute.

Flay is recorded as Poor.

The next step is saving the new hide details by pressing the green ✚ key or F10, F11 or F12 on the keyboard.

If there is a mandatory Attribute without a valid value, the hide can't be saved, and the form will nagate to the first such mandatory Attribute for the grader to correct the situation.

Tannery Management System
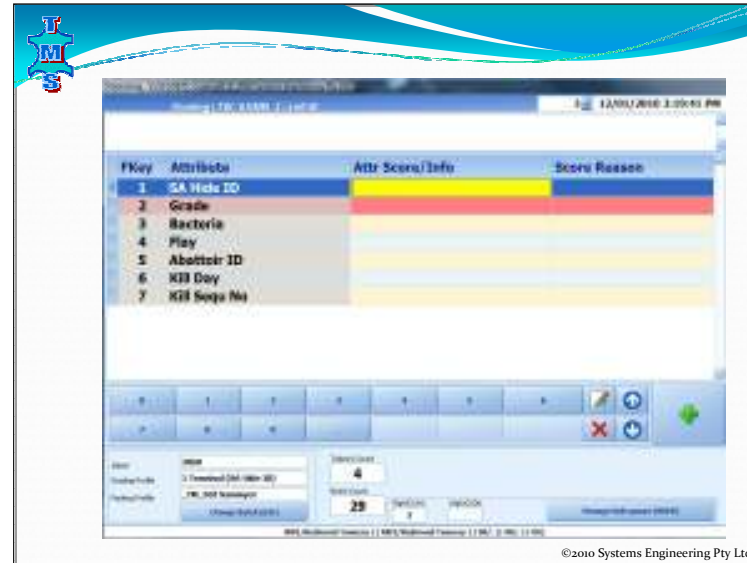
The hide has been saved and the TMS is ready for the next hide.

In this example the Attributes are set to clear for a new hide, that is, there are no Attributes with defaults, or Attributes set to carry forward the score from the previous hide, therefore all hide Attributes are set to blank.
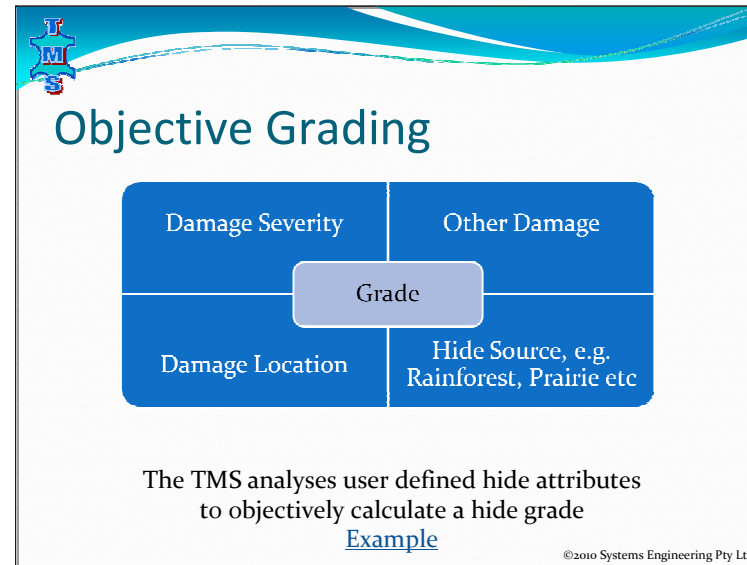
Objective Grading is a means of calculating a Grade for a hide by combination of a number of objective assessments of a hide.

An Objective Grading Profile defines the Grades that can be assigned, and for each Grade, the scores that need to be achieved for that Grade to be assigned, and the Attributes that are used to calculate the scores.

Each of these combinations is considered a 'hurdle'. The hurdles are assessed in the defined order, and the first hurdle jumped (achieved) determines the Grade assigned. Normally, the order of grades in an Objective Grading Profile, would be the highest value to the lowest although this may not always be the case, e.g. an urgent order may mean sacrificing high value grades for increased numbers of the urgently required grades.

Objective Grading Profiles are user defined, are unlimited in number, and can be specified for use in a batch by a supervisor.

Tannery Management System
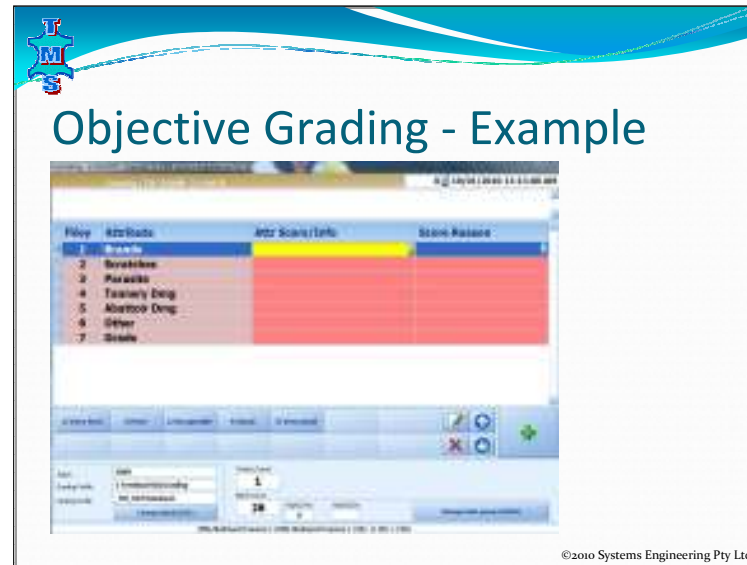
This shows the Grading form in use at a Sammyer using a single Terminal Grading Profile which allows 7 Attributes to be collected for each hide, all mandatory (all have a red background).

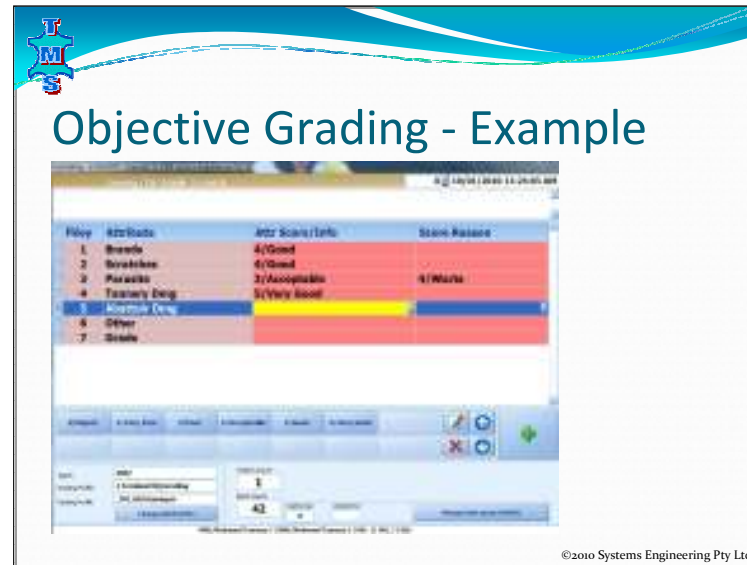The touch screen buttons have now been labelled to show the valid Brand Scores that can be entered.

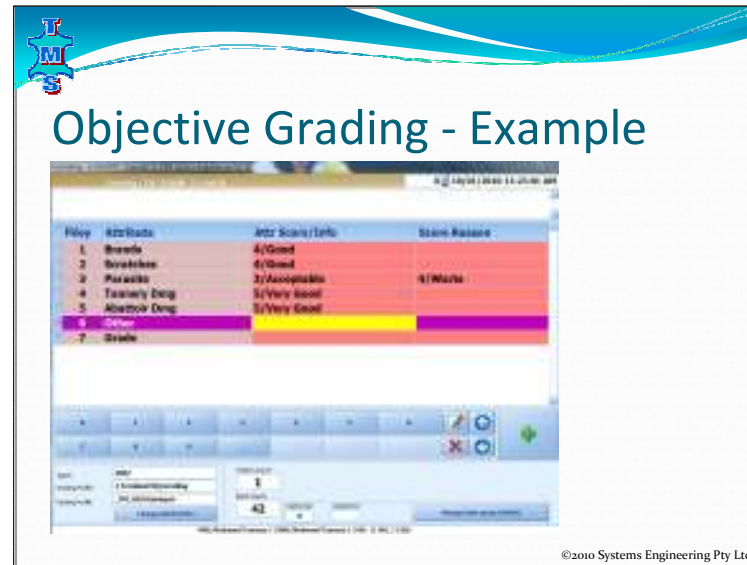Tannery Management System
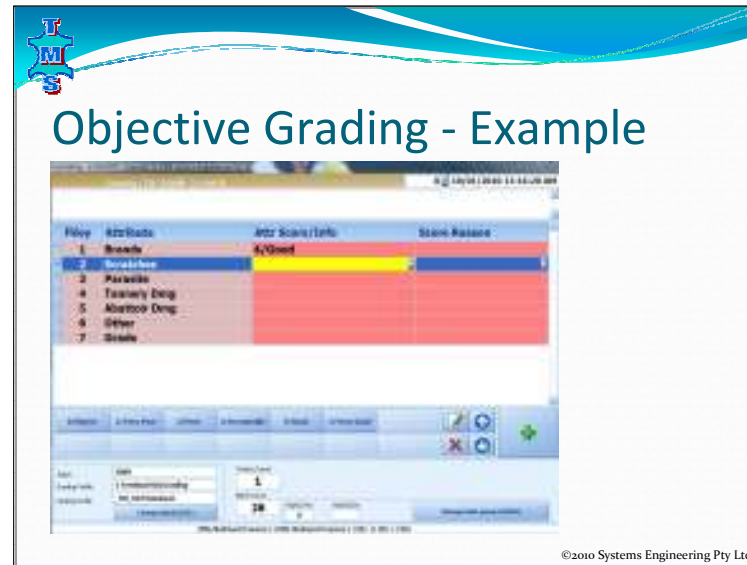
A Brand score of 4 is entered and the focus has automatically moved to the next Attribute line

The touch screen buttons have been relabelled for Scratches scores.

A Scratches score of 4 is entered and the focus has automatically moved to the next Attribute line

The touch screen buttons have been relabelled for Parasite scores.

Tannery Management System

A Parasite score of 3 is entered and the focus instead of moving to the next Attribute line, has moved to the Score Reason for Parasite. This is because the Attribute Definition of Parasite requires a reason for a score of 3.

The touch screen buttons have been relabelled for Parasite reasons.

Tannery Management System
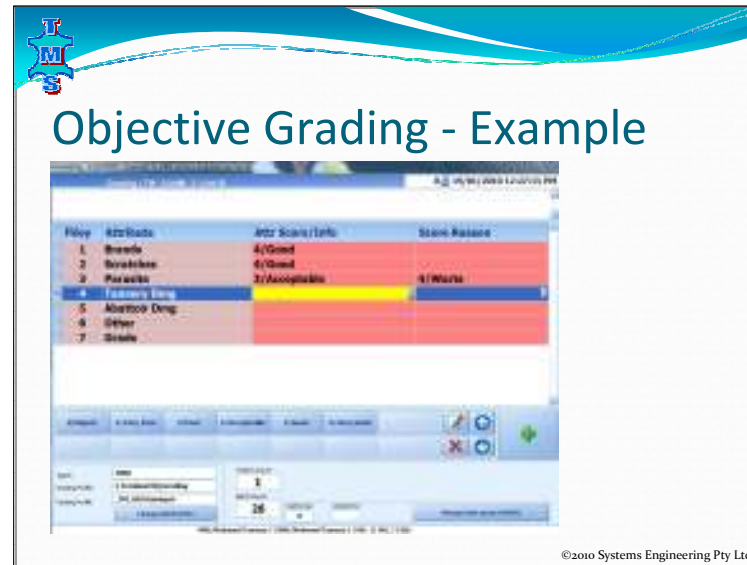
A Parasite reason of 4 is entered and the focus has automatically moved to the next Attribute line

The touch screen buttons have been relabelled for Tannery Dmg scores.

A Tannery Dmg score of 5 is entered and the focus has automatically moved to the next Attribute line.

The touch screen buttons have been relabelled for Abattoir Dmg scores.

Tannery Management System

An Abattoir Dmg score of 5 is entered and the focus has automatically moved to the next Attribute line

The touch screen buttons have been relabelled for scoring Other.

Tannery Management System

An Other score of 5 is entered. With this, the Objective Grading Profile has all the attribute scores it needs to assess the grade, which it enters as 5, and move the focus to the next Attribute line after Grade.

The touch screen buttons have been relabelled for scoring Brands.

The Hide can now be saved. If the Grader disagreed with the calculated Grade they could navigate to the Grade Attribute and override the value with their assessment.
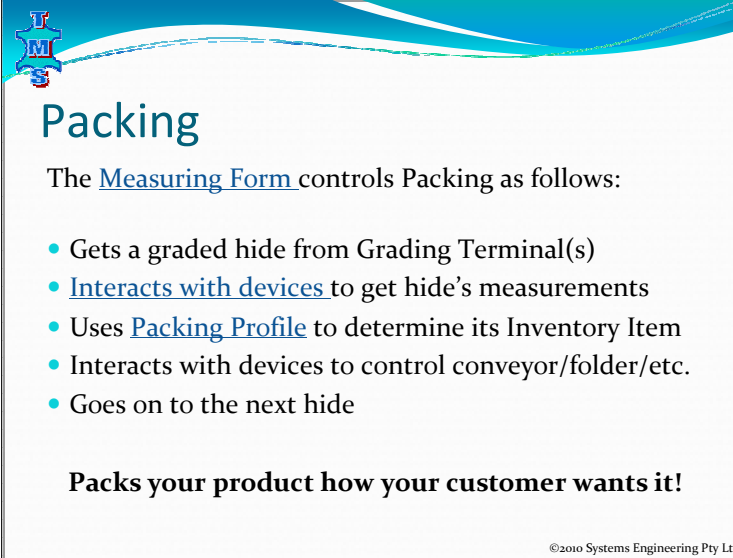
This shows an implementation of Packing at a Sammyer using weights from a simple platform scale.

Each Station will have a Packing Terminal which will read measurements of each hide, determine where the hide should be packed, and either instruct the Operators, or in other cases control a conveyor that does the packing.

Packing

The Measuring Form controls Packing as follows:

- Gets a graded hide from Grading Terminal(s)
- Interacts with devices to get hide's measurements
- Uses Packing Profile to determine its Inventory Item
- Interacts with devices to control conveyor/folder/etc.
- Goes on to the next hide

Packs your product how your customer wants it!

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The Measuring Form is the means the TMS uses to control Packing at a Station. It is usually run on a Terminal together with some Production Maintenance tools

Once all the Grading Terminals that are currently being used at a Station have saved the information for a hide, that hide becomes available to the Measuring Form. In many cases there will be a queue of hides waiting to be Measured and Packed. The Measuring form will process each in turn starting with the oldest.

As each hide is processed on the Measuring Form the TMS recognises certain "events" that can be used to initiate collection of data from other systems or devices, such as scales, area measurers, etc.

The Packing Profile applicable to the hide (which is set at the Grading Terminal, initially from the Batch selected) defines how processed product will be packed and managed in inventory. Packing Profiles are completely user definable and the TMS supports an unlimited number of Profiles. If a customer wants a slightly different weight range - this is done centrally by a supervisor or manager and is implemented automatically, i.e. the shop floor packers need not know that anything has been changed.

The Measuring Form also has "packing events" that can be used to initiate sending instructions to other systems, for example to send instructions to a conveyor with five gates to automatically place the hide into the bin determined by the Packing Profile.

Tannery Management System
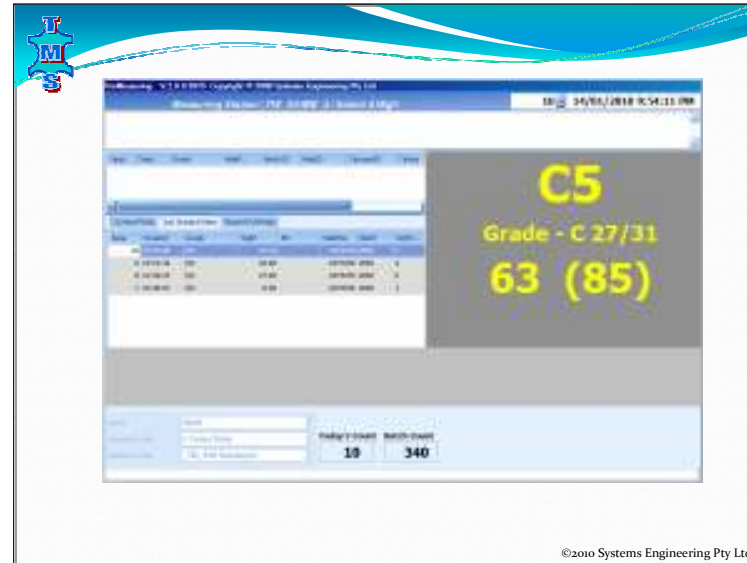

This shows the Measuring Form for a Sammyer in its idle state.

The right hand side of the form shows that the last graded hide was of Inventory Item "C5" which is described as a "Grade – C 27/31" with the last hide being the 63 on the Pallet, for which the maximum is 85.

To the left is a list of recently graded hides, although by selecting other tabs, the Current Pallets or the Recetly made full Pallets can be shown instead.
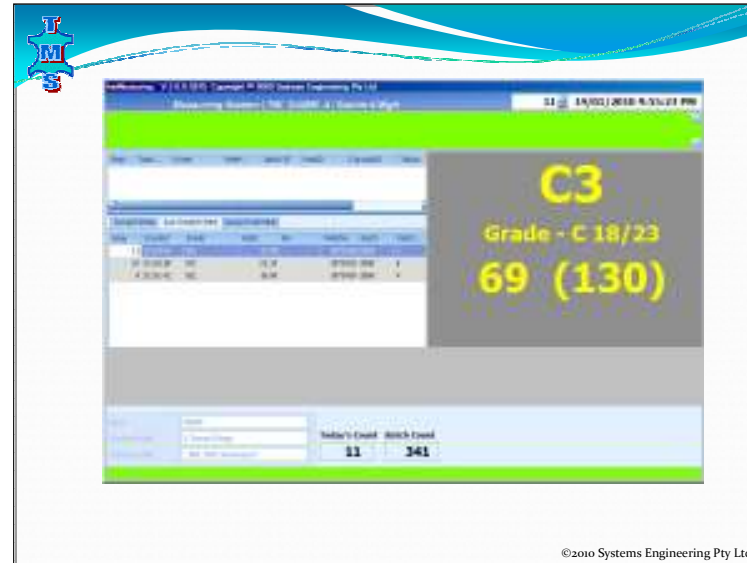
Along the bottom is shown the Batch, Grading Profile and Packing Profile being used, as well as counts of hides processed today, and in this batch.

Tannery Management System
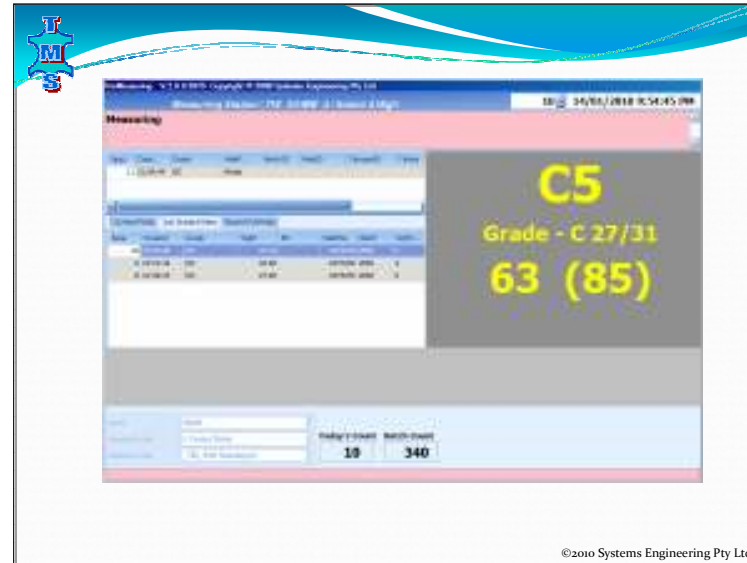
This shows that a hide is now available to be measured, and that Measuring is currently occurring.
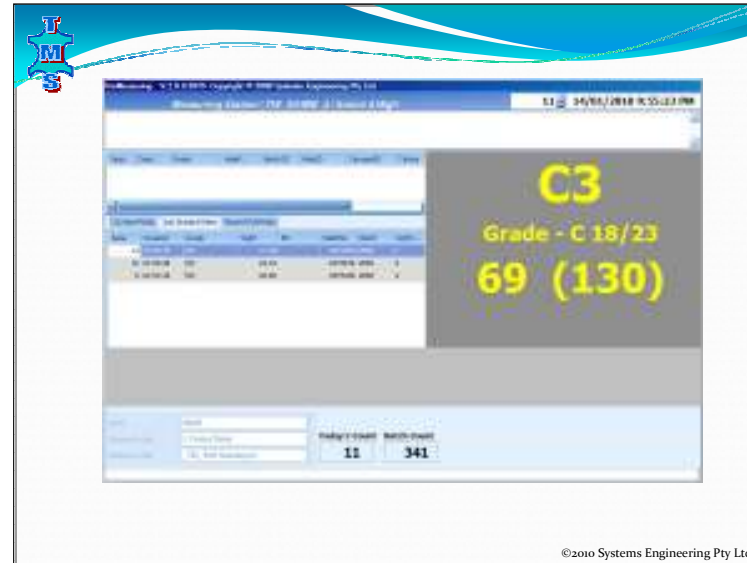
Tannery Management System

The highlighting changes to green when measurements for the hide have been received and the TMS has allocated the hide to an Inventory Item, in this case "C3". Where packing is done manually, that is, the TMS isn't controlling a conveyor to pack the hides, this is the indicator to the Operator to pack the hide.

The background to the packing information is Grey here, but once the Pallet becomes near full, it will be highlighted with a blue background, and when full with a red background. What constitutes a full or near full pallet is configured by a Supervisor for each Inventory Item.

Notice the Counts have also increased.

Tannery Management System

After a time the green highlighting is removed and the form returns to its idle state, or if there is a queue might go straight to the "Measuring state"

Tannery Management System

This is the Manual Measurement form. If the Measuring Form is unable to obtain a measurement from a device it will use this form to allow the user to enter it manually and thereby enable production to continue while the scale is repaired or replaced.

If the cause of needing a manual measurement is a broken scale, by ticking the "Manual measure from now on" box, this form will come straight up, without the delay of trying the scale first each time.

It is also possible to configure the TMS to always manually enter some measurements, using this form, however at normal production rates this is not likely to be useful.

Tannery Management System

Devices

SND/CUT < 2 kgs

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The TMS includes a very flexible serial communications capability.

The TMS works with devices including:
- Scales
- Area Measurers
- Substance Measurers
- Conveyors/Folders
- Hide Stampers
- Marquee Display Devices

The TMS can work with command driven measuring devices, or in a mode where it polls constantly until a valid measurement is obtained. It can perform averaging, and even apply unit conversions.

The TMS can also control conveyors involved in packing hides, initiate hide stampers, and display various parameters on marquee style displays.

Adding a new type of RS232 or RS422 serial interface device will generally be a matter of understanding its communications protocol and configuring a device in the TMS to suit.

The TMS' powerful facilities to communicate to with external devices would facilitates many interface types, e.g. connecting to a sensor that measures a tanning drum's speed in rpm, or a PLC that turns off a stopcock on a chemical tank.

Tannery Management System

Packing Profiles

Defines for the combination of

Size Range (Weight, Area or Substance)
&
Grade (as graded or through Objective Grading)

which **Inventory Item** a hide will be assigned

From the Inventory Item the TMS determines:
- the pallet/bin to pack on
- the pallet/bin maximums
- which labels to print for full pallet/bin

Packs your product how your customer wants it!
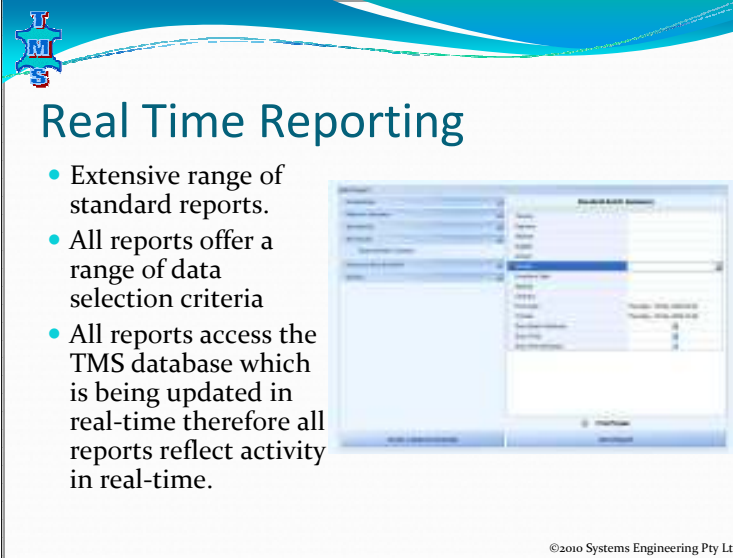
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Packing Profiles define how processed product will be packed and managed in inventory. A Profile is set for a processing batch by a supervisor so all the shop-floor grader need do is select the batch to process and the TMS automatically configures itself to pack according to the supervisors instructions.

Packing Profiles are completely user definable and the TMS supports an unlimited number of Profiles. Size Ranges, Grades and Inventory Items are also all user defined. A packing Profile may use different Size ranges for different Grades, e.g. weight and/or area and/or substance.

The Inventory Item determines which Pallet/Bin the hide will be packed on. It also defines whether a Pallet is made full through manual intervention by the operator, or automatically through one or more of Count, Weight or Area exceeding a limit. There are similarly offsets that provide an indication to the Operator that the Pallet/Bin is Near Full. When a Pallet/Bin is made Full, the TMS can print one or more pallet Labels of various formats, which is also controlled by the Inventory Item.

A change to cut-off weights for weight ranges can be done centrally by a supervisor to suit an immediate requirement for a customer, and the packers need not know that anything has been changed. If a good customer has special packing requirements, a packing Profile can be set up for their exact requirements.

The left hand panel in the diagram allows a Report to be selected, it shows the report groups, and upon expanding them show the Reports in the group. Here we can see the Receival Batch Summary.

On the Right we can see the selection criteria for the Report selected on the left. These differ for each report, however they give a comprehensive range of options for focusing on the information you're interested in. In this example we can see that we could select by any of the range of Source descriptors (Tannery, Operator, Abattoir, Supplier or Grower).

Reports show the information as it exists in the Database as it exists when the report is run. Almost all reports can be constrained by "From" and "To" dates to see what the state was at a previous time, e.g. a production report for Customer A for last month.

Tannery Management System

Reports are designed to be easy to understand, and can be previewed, before or instead of printing. They can also be saved as "PDF"s, or exported to Excel, for emailing or further analysis.

At the footer of the final page of every report are the selection criteria that were used to produce the report, and there is a facility to put a comment on a report, so you need never find a report on your desk that you don't know what it was for or how it was produced.

New Reports can be added to the TMS quite easily, so if the TMS doesn't currently have a report that suits your exact requirements, new reports can be added quickly.

Tannery Management System

The standard TMS reports are complemented by a powerful production analysis tool for drag and drop pivot table style analysis.

One particularly powerful capability this gives is the ability to analyse the result of previous production with modified weight or area size ranges. If the pallets of an Inventory Item are producing an average size that is too light, recent production can be analysed to determine what change in the cut-off weights for the weight ranges is required to fix the problem for this Inventory Item, while not adversely effecting surrounding weight ranges. Previously this might have been done by trial and error with actual production.

Tannery Management System

Supervisory Control - Overview

Factory floor production can be controlled through
- Batches
- Work Orders
- Grading Profiles
- Packing Profiles
- Inventory Items
- Real-time reporting
- Inter pallet/bin transfer of hides (with full logging)
- Recipe management and batch run sheets

The TMS gives the Supervisor control

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All Production recorded in the TMS is recorded against a Batch, and in setting up batches Supervisors can set how they want production to run. (explained next slide)

A Work Order is a means of selecting inventory so that it is reserved for a production process and by assigning it to a batch restricting the pallets/bins that can be used in that batch. (more on Orders, slide after next)

A Grading Profile is assigned to a batch to set how the batch is Graded (as discussed earlier). There are controls that ensure only a Grading Profile appropriate to the batch can be selected.

A Packing Profile is assigned to a batch to set how the batch is Packed (as discussed earlier). There are controls that ensure only a Packing Profile appropriate to the batch can be selected.

Inventory Items have a number of controls that the supervisor can use to control aspects of Packing (as discussed earlier). There are controls that ensure Inventory Items can only be used where it is appropriate, for example, to stop a Grain Split being allocated to be Fleshed.

With the TMS's real-time reporting, a supervisor can see how production is going, now. For example, they can see the current production rate at each station, and how it has changed over the shift.

We all know that despite all the controls in the world, occasionally mistakes are made. The TMS has a number of Production Management Tools that allow mistakes to be corrected, safely, with a full audit trail. The most frequently used of these is the Inter Pallet/Bin Transfer.

To get consistent product, a consistent process is required. The TMS provides, user defined, Recipes which can be created and maintained, and assigned to Short Term Preservation and Tanning batches. Run sheets can be produced with the quantities of chemicals calculated for the particular batch.

Tannery Management System

Production at a TMS Processing Station can only commence after a batch has been selected for the production to be recorded against. Batches will be set up by a Supervisor, and can be made active only when a batch is physically ready. The Batch can also be assigned to a particular Station, for example, if there are two Sammyer Stations, one which is better able to prepare hides for splitting, batches of hides that are expected to be split can be directed to that Sammyer.

Different types of Batches provide different types of controls; for example:

•Receival batches have values that indicate types of hides expected , the numbers, and the expected total or average weight

•Short Term Preservation and Tanning batches use Recipes

•Fleshing, Brining, Salting, Sammying, Splitting and Regrading batches use Grading and Packing Profiles.

•Splitting and Regrading batches can have work orders assigned to them to limit the Pallets/bins they can use.

Tannery Management System

Supervisory Control - Order Types

- The TMS has several order types into which product can be allocated (either manual or automatically as pallet/bins are made full).
  - Export
  - Domestic
  - Internal Work Orders (Regrade / Splits etc)
  - Interplant Transfers

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Orders in the TMS are used for the reservation of product for a purpose, and also provide a means of recording information about the order in the form of attributes.

The purposes for which Orders are used include:
Shipping Inventory from the system as a Sale (whether Domestic or Export)
Restricting the product that can be used in a splitting or regrade batch (Work Orders)
Shipping product to another Tannery in the same Group.

With Sales Orders, Attributes are used to record information about the sale that can be used to produce shipping documentation. There can be different Order Types defined to represent Sales to different regions and having the correct Attributes for the documentation required in that region.

As well as this a supervisor can set up an Order so that as inventory is produced it is automatically allocated to the Order until complete. This is accompanied by possible restrictions on the source of the inventory, priority of the order, inventory items involved, and the quantity of each.

Tannery Management System

All TMS Forms have the same look and feel. They follow an overall "theme", that can be changed through a single setting.
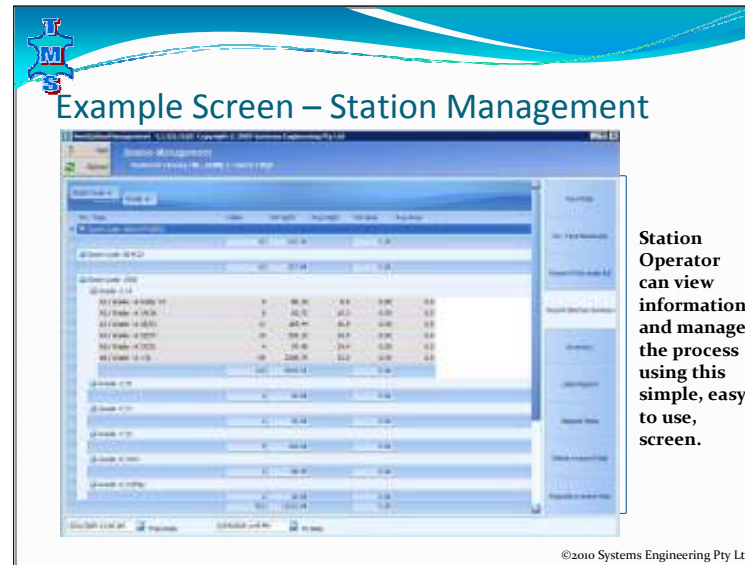
The TMS has been designed to allow data entry for in-plant terminals without a mouse, either via keyboard or Touch screen.

The TMS uses menus to show the user what capabilities are available to them. Each user's menu may be different due to the different capabilities they have been assigned in the TMS' security system. Like so many things in the TMS, menus can be altered to suit the circumstances, with capabilities grouped differently, additional capabilities added, etc. Security can also be modified to give each user what they need.

The TMS is a production system, so to ensure speedy start-up, when users login to an in-plant data entry terminal, the data entry forms appropriate for the terminal (NOT the user) start automatically.

Note: The login process is required by the Operating System, but in a production system you can't afford to have terminals not working because no-one knows the password. Therefore the TMS uses the same user to login each Terminal at a Station, and uses policy settings to ensure that the terminals can't be used for anything but their proper purpose.
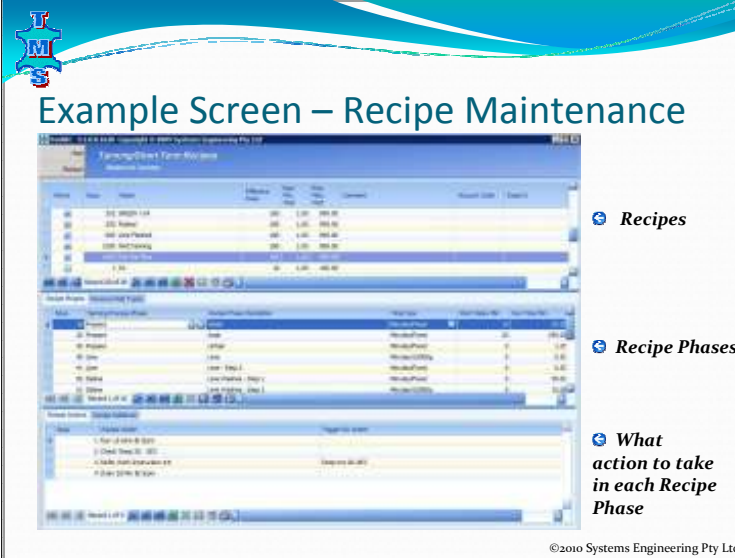
Tannery Management System

Example Screen – Station Management

Station Operator can view information and manage the process using this simple, easy to use, screen.

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The Station Management Form will be available at each Station (normally on the same terminal as the Measuring Form) and gives immediate access to information and management functions. The buttons down the right hand side select between the various functions:

•Part PUNs   Shows current status of in-progress pallets / bins
                         associated with the Station, and allows them to be set full.
•Inv Pack Maximums   Changing pallet / bin maximums as needed during
                         production, e.g. moving from long to short pallets.
•Recent PUNs made full   Review the pallet / bins made full in the last 24 hours.
•Recent Batch Summary   See how hides are being graded and weight ranges in
                         recent batches (the above screen).
•Inventory   See the current inventory status of inventory types
                         produced at this station.
•Label Reprint Reprint a set of pallet labels, to selected printer.
•Skipped Hides   Review and reprocess hides that have been set to one
                          side for some reason.
•Delete Recent Hides   Delete hides as needed.
•Regrade Recent Hides   Regrade recent hides as needed.

Tannery Management System
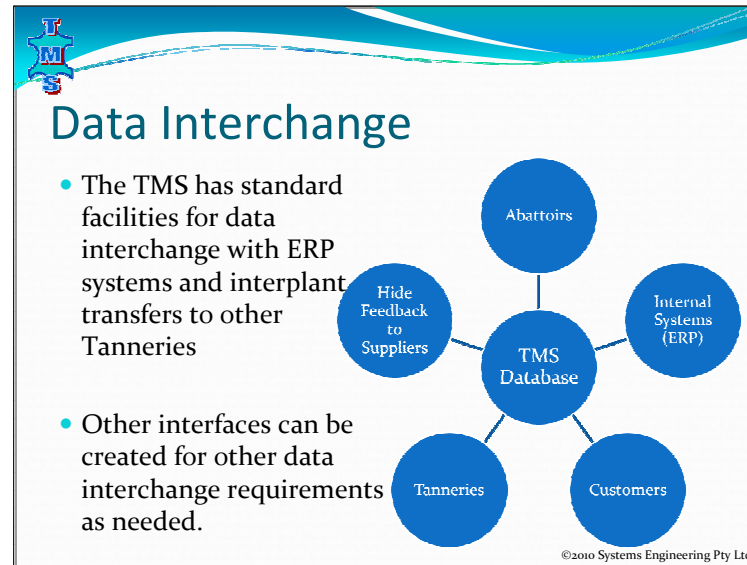

Recipes can be applied to any Short Term Preservation or Tanning Batch

Quantities of chemicals etc are automatically calculated according to the number / weight of hides allocated to the batch.
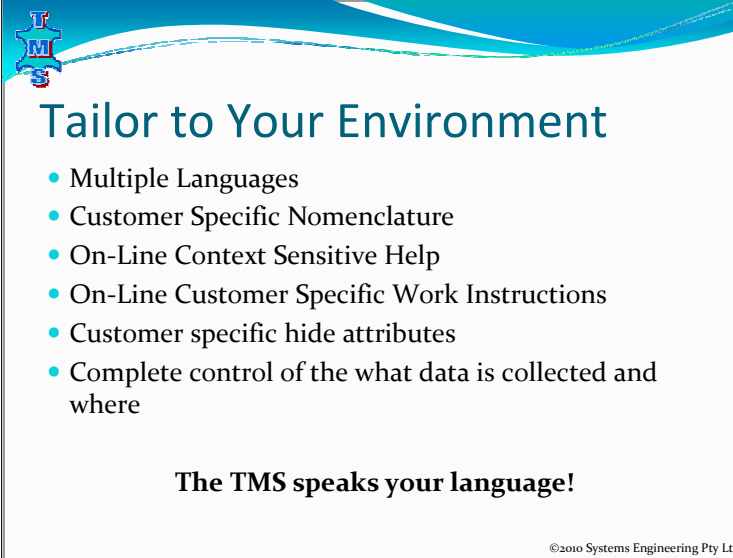
Run sheets are can be printed to show phase times and chemical quantities to be added at each phase.

Tannery Management System

- The TMS has a flexible data interchange capability
- It currently supports
  - Export of Production data to ERP systems
  - Import of Orders and Export of Shipments to Sales systems
  - Export of data to Accounting systems
  - Import and Export of hide data to support inter-plant transfer of hides to other Tanneries with the TMS

- Other interfaces can be created for other data interchange requirements as needed.

Tannery Management System

Tailor to Your Environment

- Multiple Languages
- Customer Specific Nomenclature
- On-Line Context Sensitive Help
- On-Line Customer Specific Work Instructions
- Customer specific hide attributes
- Complete control of the what data is collected and where

The TMS speaks your language!

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The TMS has been designed and produced from the start so that all text that is visible to a user is provided from Database tables. Further, most prompts are provided from Localisation tables that support having different users on the same TMS being shown different languages.

The multiple language support also allows the TMS to use the local names of things, rather than imposing a name isn't known locally. For example, what's known in Australia as an Abattoir is referred to in the USA as a Packing Plant.

Throughout the TMS, the help system is available at the click of a button, and will show help relevant to the function you're using. The help system also supports multiple languages.

The help system describes how the TMS works, but you are more interested in how you want to use it. You can extend help system to include instructions and procedures on how you want your TMS used for the function you're using.

Tannery Management System

The TMS is 24 x 7 system that has no required shutdown times and is available whenever it is needed to record your production and provide management information.
The TMS provides a stable platform that you can rely on, due to 4 related aspects of the System's Design and Implementation: Reliability, Availability, Remote Access, and Support

Reliability - The TMS uses proven, reliable technologies in Windows Server 2008 Operating System, the latest in Microsoft's line of reliable server operating systems, Microsoft's SQL Server 2008 Database, a highly reliable database capable of storing many million records, Microsoft's Terminal Services, to provide thin client terminal access, and Visual Basic .NET as the development platform.
The TMS software was designed to build on the reliability of these components in a consistent manner to produce a reliable and supportable system. This combination and countless hours of testing, has made the TMS an extremely reliable system.

Availability depends on the software's reliability as well as the hardware that supports it. The Hardware Architecture of the TMS tries to eliminate single points of failure wherever possible, or to minimise the impact so that service can be quickly restored, or the effect limited to a small area of functionality. It is also designed to aid speedy diagnosis, so problems can be quickly resolved.
Features of the Hardware Architecture include:
Servers to run the TMS should include mirrored hot swappable disks with a hot spare, redundant power supplies, UPS, error-correcting memory, 3 network interfaces and redundant fans.
For higher availability the TMS can use dual Servers, one handling the database, and the other the application, but also replicating transactions to a backup database. If a server fails, the other can be switched in a few minutes to handle both tasks with little or no data loss.
Terminals on the factory floor should be thin-clients, which can be configured in under 15 minutes out of the box, and connected on a dedicated TMS factory network.
Interfaces to serial devices should be through Adam Serial-to-Ethernet interface devices
A quantity of spares of thin-clients, network switches, Adam Serial-to-Ethernet devices, should be held to enable quick replacement.

Remote Access - The TMS uses Microsoft's Terminal Services to allow users to login on the factory floor, and also Supervisors, Managers and Administrative Staff via the "Office" Network. If the plant is part of a WAN, access to the TMS from the headquarters or remote offices becomes possible, and with a Virtual Private Network (VPN) the TMS becomes accessible in a secure manner from wherever an internet connection is available. Without a VPN, dial-up remote access can still be provided.

Support - With a TMS support contract in place, support is only a phone call away 24 x 7 x 365. Systems Engineering have a long proven record of providing timely support around the clock, having simultaneously supported systems in Ireland, Australia and New Zealand. With VPN access Systems Engineering will actively monitor the TMS to identify issues before they become problems, will help users with configuration changes, will keep the TMS updated and supply minor enhancements, and will help diagnose any hardware issues that occur.