Implemetation of Kanban

Makarand Prabhakar Lehekar
Deogiri Institute of Engineering & Technology,
Aurangabad, India

Prof. Mangesh Urne
Deogiri Institute of Engineering & Technology,
Aurangabad, India

SAP R/3 ERP 6.0

1. Principle

Kanban (かんばん(看板) is a scheduling system for lean and just-in-time (JIT) production. Kanban is a system to control the logistical chain from a production point of view. Kanban was developed by Taiichi Ohno, at Toyota, to find a system to improve and maintain a high level of production. Kanban is one method through which JIT is achieved.

Kanban became an effective tool in support of running a production system as a whole, and it proved to be an excellent way for promoting improvement. Problem areas were highlighted by reducing the number of kanban in circulation.

1.1 History

➢ Developed by Toyota in year 1950s. (Kanban is a Japanise word & means Label)
For the following reasons:
  1. Overproduction
  2. Insufficient Productivity – Avoiding waste
  3. Lack of raw material & space
 4. Complexity of central production control

➢ Companywide implementation in Toyota in late 1960s
➢ In Europe the Kanban is used in early 1990s
➢ In India the Kanban is used in early 1990s

1.2 Purpose

Kanban causes a pulling of material from a downstream position to an upstream position within the production process. This means, the upstream position only supplies the downstream position with parts if they demand them. The demand of parts will be done by the Kanban (jap. for label). The Kanban-card contains all necessary information for the material-flow. Kanban-material buffers between producer and consumer are limited upwards. This cap of the coverage will be achieved by a limited number of Kanban-cards, which are circulating between up- and downstream position. Therefore the usage of a Kanban system counteracts the main type of waste "overproduction".

Kanban aligns inventory levels with actual consumption; a signal is sent to produce and deliver a new shipment when material is consumed. These signals are tracked through the replenishment cycle, bringing visibility to both the supplier and the buyer.

Kanban uses the rate of demand to control the rate of production, passing demand from the end customer up through the chain of customer-store processes.
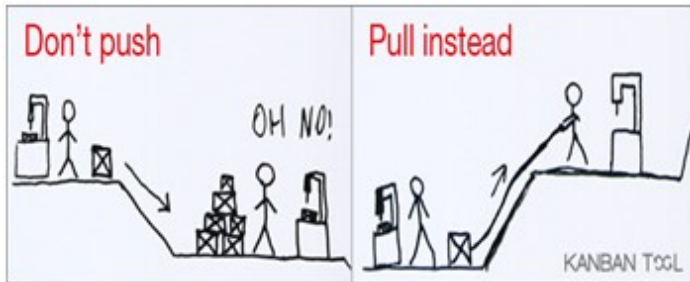
1.3 Currently there exist four different Kanban-methods:

➢ Production Kanban

➢ Stock transfer Kanban (from central to decentral stock and also from decentral to decentral stock)

➢ Supplier Kanban with external supplier's

➢ **NEW**: Supplier Kanban with the CONSUMER's or **CONSUMER-supply with Kanban** (Topic of this manual)

1.3.1 Supply with Kanban (Supplier-Kanban)

Procedure	Bin Status
The consumer withdraws parts out of a Kanban bin.	`6111` (green)
As soon as the parts are completely consumed, the Kanban-Card should be scanned **EMPTY** and destroyed afterwards.	`6111` (red)
Caused by this **EMPTY-Scan** a new Kanban-replenishment-purchase order (Kanban-PO) for the quantity of this bin will be created.	`6111` (red)
A cyclic job (ZMZKAN09) at the consumer checks the data of all Kanban-PO's. If all data are OK the status of the Kanban bin will be set to **PROCESS** "Container in process" and the EOI order transfer will be started.	`6111`
The supplier get's a new Sales order created by EOI. This Sales-order obtains the delivery priority "**88**" which identifies them as special Kanban Sales orders (Kanban SO).	`6111`
A cyclic job at Supplier checks the availability in the Supplier-Kanban stock and if the material is available, the Kanban-SO will be released and confirmed automatically.	`6111`
Another cyclic job creates the delivery note and prints the Kanban-Card directly in -shipment dept. at Supplier automatically.	`6111`
After packing and labeling the goods, the "goods issue" will be posted in Supplier and the bin status at the consumer will be set to **TRANSP** "Container in transport". The goods will be transported to the Consumer.	`6111` (yellow)
After arriving at the Consumer the goods will be transported to its shelf in Consumer-production and the worker does the **FULL-Scan** on the attached Kanban-Card. MIGO will be done in the background automatically.	`6111` (green)

2 Requirements

The following requirements are necessary for the conversion of a material-number at CONSUMER-Kanban. Each of them will be described in detail:

➢ Appropriate material-numbers.

➢ Supermarket-shelves which comply with the standard.

➢ Existing Kanban-Terminals with SAP-access.

➢ Material-number must be already set up in the Kanban-stock of the supplier.

2.1 Material-Numbers

An appropriate material-number for CONSUMER-Kanban should have a consumption of minimum the quantity of one Kanban-bin per month or more. This consumption has to be regular, which means min. once a month.

The calculation of the number of bins, considering consumption, filling-quantity, replacement-time and safety-time, should be done with this suggested Excel-sheet.

In this sheet can be filled in all material-numbers with their shorttext, material –type and consumptions. Afterwards the following fields have to be filled in for the calculation of the number of bins:

➢ Replacement time or replenishment lead time (RLT = time between Empty- and full-scan)

➢ Kanban-bin

➢ Quantity per bin

➢ Safety time (min. half RLT)

On the basis of this data, the needed number of bins/cards which have to be circulated, will be calculated automatically (Column "Cards rounded"). The calculation will be done with the following formula:

$$\text{Number of Kanban cards} = \frac{(\text{Ø Consumption/WD} \times \text{RLT}) + (\text{ST} \times \text{Ø Consumption/WD})}{\text{Quantity/bin}} + 1_{1)}$$

RLT: Replacement time or replenishment lead time in WDs (time between Empty- and full-scan)

ST: Safety time in WDs

WD: Workday

    1) Container from which currently the parts will be withdrawn (Container in use!)

## 2.2 Supermarket
A Kanban-storage (also called Supermarket-shelve) should be built, as in **two pager No. HA 9** explaine.

2.3. Kanban-Terminal

For an effecient handling of the Kanban-process a "Kanban-terminal" in close proximity to the Kanban-storage is important. This terminal constists of a computer with SAP-access, a large screen (min. 19 inches diagonal) and a wireless barcode-scanner . This "Kanban-terminal" should meet two requirements. On the one hand, there should be done the "Empty- and the Full-scans" of the Kanban-cards from the assigned Kanban-storage, on the other hand, it serves the purpose of visualization of all the Kanban controlcycles of this Kanban-storage (Kanban-board e.g. in order of their urgency).
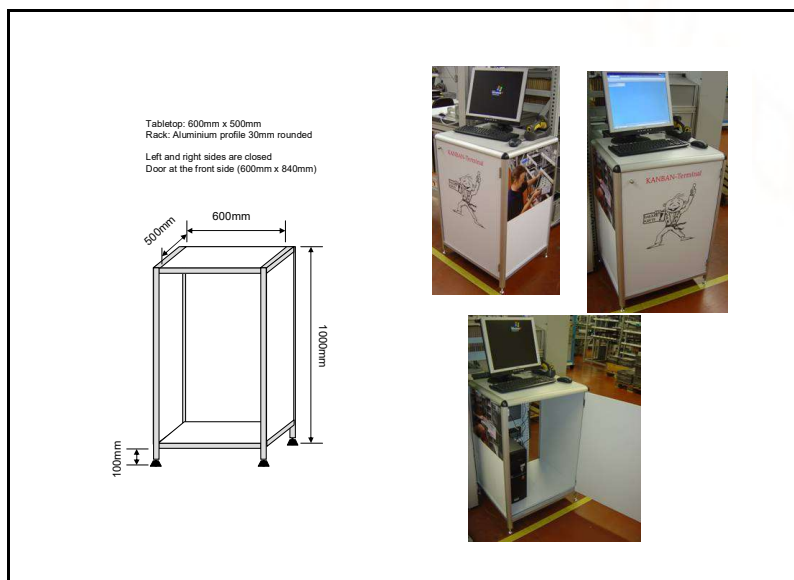
3. Setup

3.1. Supply area

A supply area in SAP is always allocated to a storage location and specifies where Kanban-material must be delivered. A supply area is always a subarea of one decentral stock area.

A supply area is defined in the Kanban-Customizing of SAP and allocated to the following objects:

➢ One plant

➢ One storage location

➢ Person in charge or Responsible (normally the MRP-controller in SAP)

The posting of any material movements will be done on the allocated storage location. Multiple supply areas can be created in one storage location, but one supply area can't be allocated to different storage locations.

If one material is used in different supply areas which are allocated to the same storage location, the view of the stock overview (MMBE) shows always a total sum of all different supply areas.
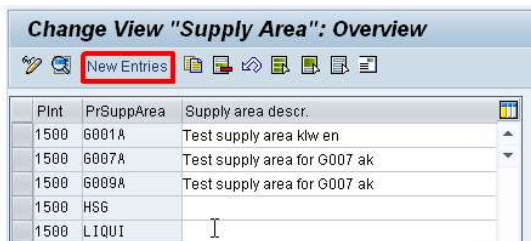
As a matter of principal, supply areas should be centrally administrated (by the Kanban-experts)

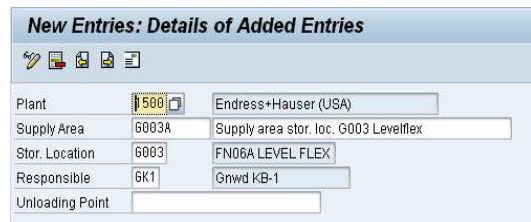### 3.1.1. Creation of supply areas in SAP with PK05
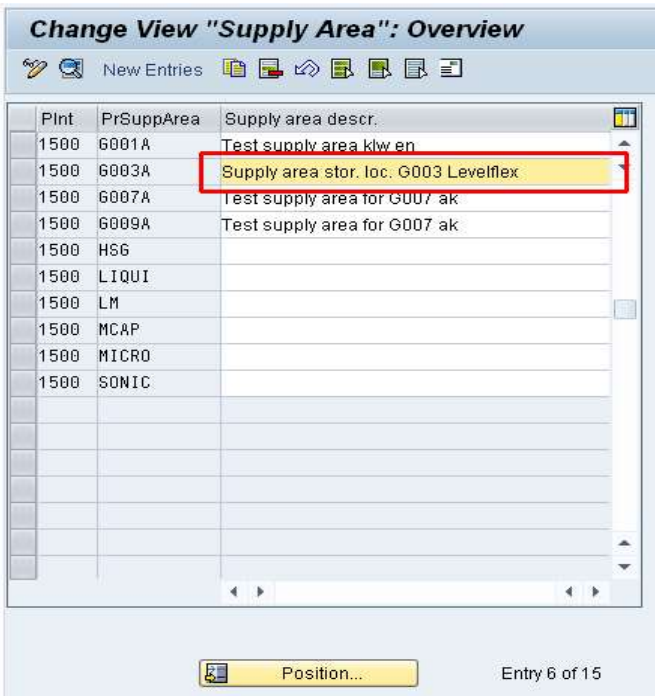
PK05
Select plant an click ENTER

Click "New Entries"

Fill in the necessary data.

💾   Save the new supply area.
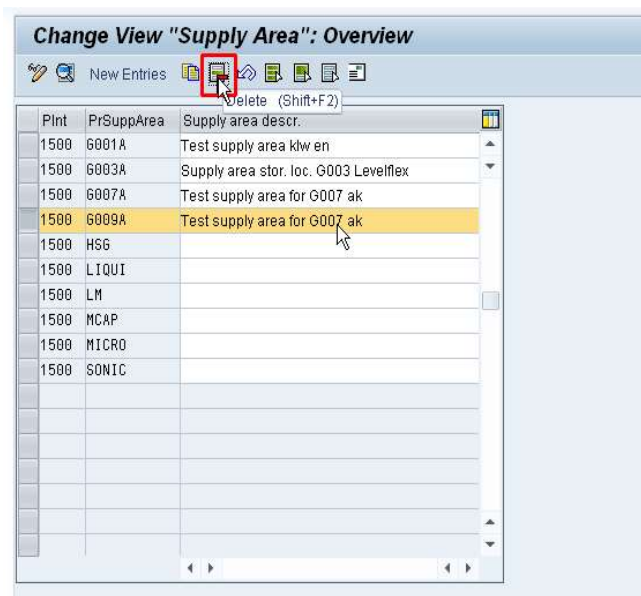
3.1.2. Change

PK05

Double click the row which should be changed. Then do the changes and

🖫 Save changes.

3.1.3. Delete

PK05

Mark/highlight the row which should be deleted. Then click "delete" and

🖫 Save changes.

Supply areas can only be deleted if there are nomore any controlcycles allocated to this supply area.

➔ Delete controlcycles first.

3.2. Control cycle

3.2.1. Creation of control cycle (PKMC)

CONSUMER-Supply with Kanban (CONSUMER Supplier-Kanban)

- Stor. Loc. MRP indicator "1" in MM02 / MRP4 for the related storage location must be set before starting the creation, otherwise a new controlcycle can't be created. After creation of the controlcycle this field **must be deleted** again!

Start **PKMC** and fill in "Plant" and "Supply area" then press the button ✏ to change from "Display" to "Change" mode.

In "Change" - mode there's a button 🗋 to create a new controlcycle.

Choose "Classic KANBAN" and fill in the material number and press the ENTER ✔ button.

Fill in the necessary information: **No. of Kanbans, Quantity per bin** and choose a **container part-no** (Only used for printing the container description onto the Kanban-Card)

The storing position should only be used if there's more than one supply area on one storage location. Otherwise this information has to be maintained in material master.

For "CONSUMER-supply with Kanban" the only allowed strategy is "**1004**". Then hit **ENTER**

Fill in the necessary information: **Purchasing Org.** and **Vendor-no.**

The field Agreement isn't necessary for strategy 1004!
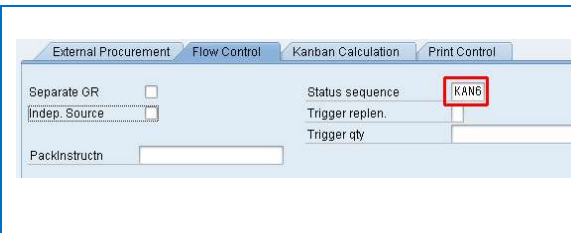
	Change to tab "Flow control" and fill in the status sequence "**KAN6**", the only allowed sequence for "CONSUMER-supply with Kanban"
💾 Save new controlcycle and remove **Stor. Loc. MRP indicator** "**1**" in MM02 / MRP4. **Hint:** Use whenever possible, an already existing controlcycle as a "copy from" template.	

3.2.2. Creation with template (PKMC)

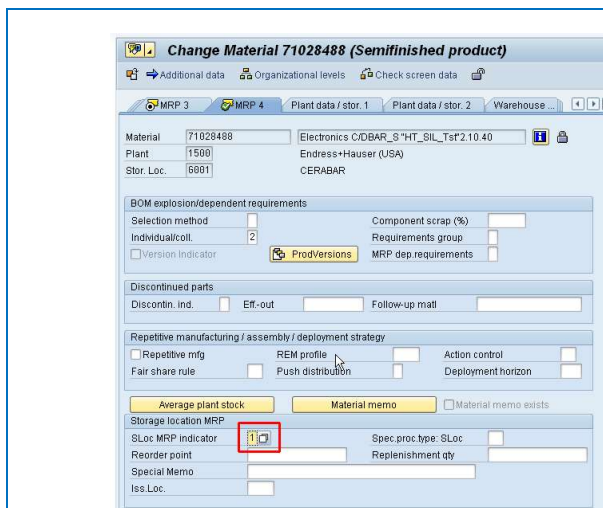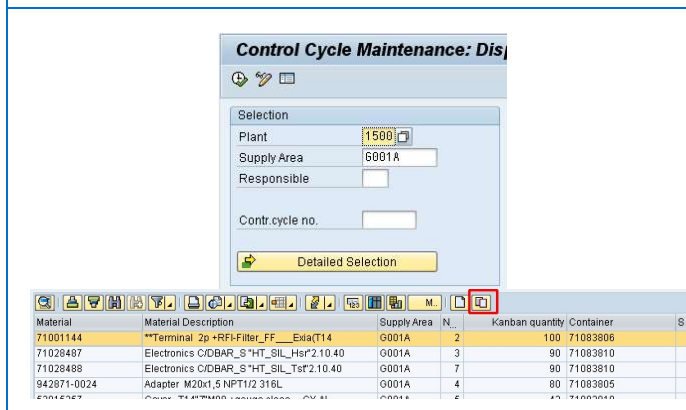|	
	- **Stor. Loc. MRP indicator** "**1**" in MM02 / MRP4 for the related storage location must be set before starting the creation, otherwise a new controlcycle can't be created. After creation of the controlcycle this field **must be deleted** again!
	Start **PKMC** and fill in the needed selection data e.g. "plant" and "supply area" and start with "F8" or button ⊕. Switch to "change mode" with the button ✎. Choose the controlcycle which you want to use as a template and press the button 🗇 "Create with template"
	Choose "Classic KANBAN", fill in the material number and the supply area which you want to create and press "ENTER" ✔. Now you can follow the same rules than in chapter 3.2.1 Creation of control cycle (PKMC)
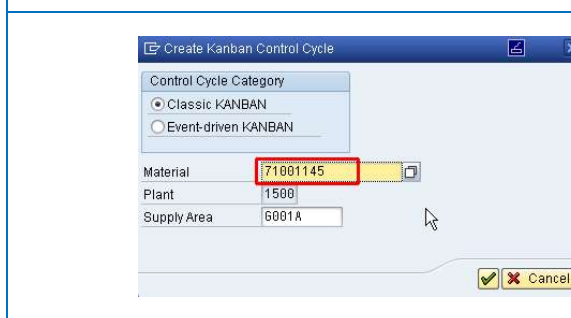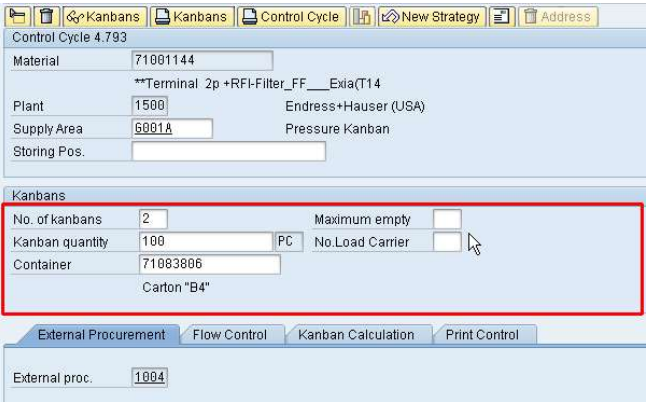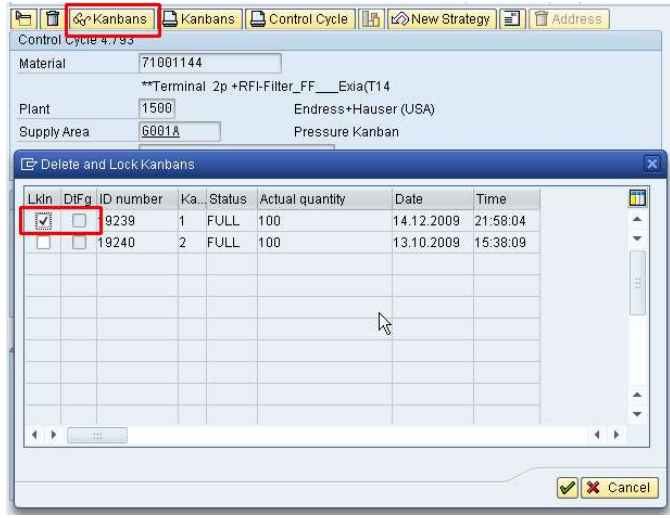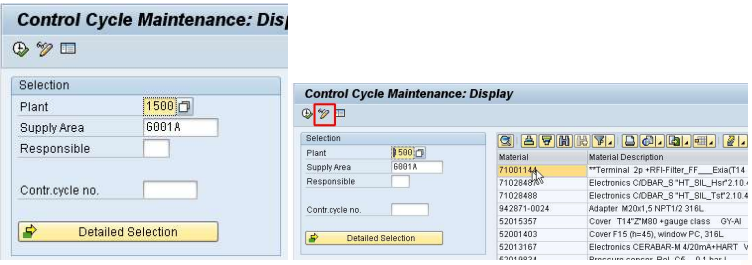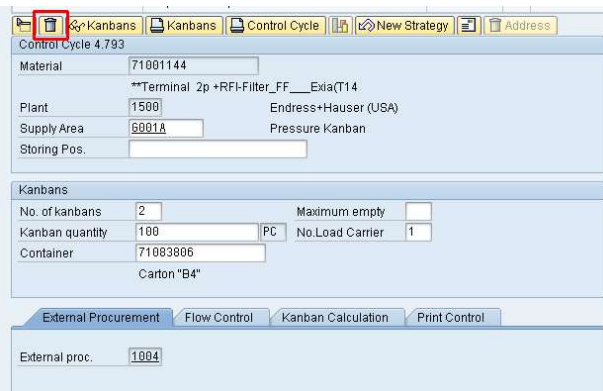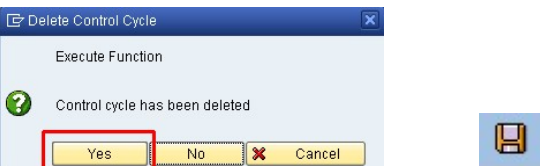
⊞ Save new controlcycle and remove **Stor. Loc. MRP indicator** "**1**" in MM02 / MRP4.

3.2.3. Change controlcycle (PKMC)

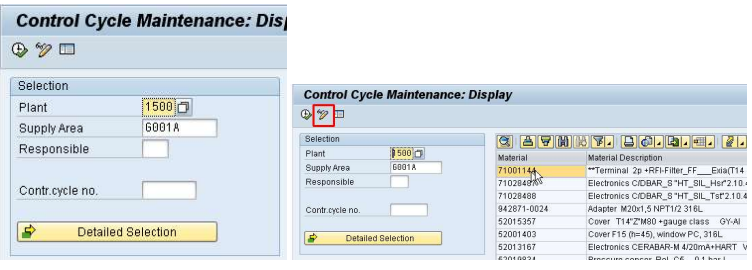|	
	Start **PKMC** and fill in the needed selection data e.g. "plant" and "supply area" and start with "F8" or button ⊕ . Doubleklick one of the listed controlcycles to display the detailled data of this controlcycle. Switch to "change mode" with the button 🖉 .
	Increasing "**No. of Kanbans**" (Reducing only works via the Button ⟨Kanbans⟩) Changing of "**Kanban quantity**" Changing of the "**Container**"
	Reducing of the "No. of Kanbans" and blocking of bins via Button ⟨Kanbans⟩ . Each bin can be locked (LkIn) or deleted (DtFg). The locking indicator (LkIn) causes the marking of the bin-id with an "X", which means, after the next EMPTY-scan this bin will change to status WAIT instead of EMPTY and will no longer be in use. This **WAIT** is the precondition to delete a bin. The delete indicator (**DtFg**) can only be set if the bin status is **WAIT**.

	After setting the delete indicator (**DtFg**) the "No. of Kanbans".will be adjusted automatically.
	Save changes.

3.2.4. Deletion of control cycle (PKMC)

	Start **PKMC** and fill in the needed selection data e.g. "plant" and "supply area" and start with "F8" or button ⊕. Doubleklick one of the listed controlcycles to display the detailed data of this controlcycle. Switch to "change mode" with the button.
	Before a complete controlcycle can be deleted, **all** existing bins must have the status **WAIT**! To achieve that all bins get the status WAIT, the locking indicator must be used (as described in the previous chapter "Change").
	Press "YES" and save the deletion.

3.3.Material Master Data

<table>
<tr>
<td colspan="2">CONSUMER-Supply with Kanban
(CONSUMER Supplier-Kanban)</td>
</tr>
<tr>
<td></td>
<td>

View "Purchasing"

Purchasing Group: must have a "**K**" on the second position. There are 9 different purchasing groups for each CONSUMER available which must be used. E.g. **GK1** to **GK9** for CONSUMER Greenwood.

~~**Purchasing value key**: Must be "**F**"~~ **no longer needed!**

Goods receipt processing time: Average transport time from SUPPLIER to CONSUMER + internal handling time CONSUMER (Time from Goods receipt to arrival in Kanban stock)

</td>
</tr>
<tr>
<td></td>
<td>

View "MRP1"

MRP Type: Must be **ZK** (special type for Kanban-usage)

MRP Controller: The same logic than for the purchasing group (must be identical)

Fixed lot size or **min. and max. Lot size**: Must be the same than the quantity of the Kanban bin.

Rounding value: If maintained, it must also be the same than the quantity of the Kanban bin.

Reorder Point: Should be empty because it won't work with ZK.

</td>
</tr>
<tr>
<td></td>
<td>

View "MRP2"

Planned delivery time: Internal handling time SUPPLIER + Time shift between CONSUMER and SUPPLIER (Normally **3-5** days)
→Must also be set in the info record.

SchedMargin key: Must be "**R**"

Safety time indicator: Must be "**2**" (Safety time for all requirements)

Safety time: Safety time must be the same than used in the Kanban calculation.

Safety stock is not necessary because of the usage of the safety time in the Kanban-calculation which is also a kind of safety stock.

</td>
</tr>
</table>

View "MRP4" for Kanban storage location

Storage location MRP indicator: For the creation of the Kanban controlcycle this field must be set to "1", otherwise a controlcycle can't be created. After the creation the field must be emptied again.

All other fields must be empty.

View "Plant data /stor.1" for Kanban storage location

Storage Bin: This field has to be used to define the coordinate / place where the material physically is stored (shelve position). This information will be printed on the Kanban card.

If there is more than one supply area, this information has to be maintained directly in the controlcycle (field: "storing position") this overrides the field in material master.

3.4.   Info record / Source list

CONSUMER-Supply with Kanban (CONSUMER Supplier-Kanban)	
	View "Purch. Organization Data 1" **Planned delivery time**: Internal handling time SUPPLIER + Time shift between CONSUMER and SUPPLIER (Normally **3-5** days). **Purch. Group**: Same like in Material master **Standard quantity**: Must be the same like the quantity of the Kanban bin. **Minimum quantity**: Must be the same like the quantity of the Kanban bin.
	Source list **Fixed source of supply**: Must be checked **Usage in MRP**: Must be "**1**"

4. Startup

4.1 Preliminaries

> ➤ Controlcycle is created

> ➤ Material master data are maintained

> ➤ Info record and Source list are maintained

> ➤ Supermarket (shelve) is set up and the storage compartment is clearly labeled (coordinate as printed on the Kanban card)

For a smooth transition to a Kanban stock it is necessary to repack the existing stock inventory into the new Kanban bins (same quantity and size). If necessary the remaining inventory from Central stock has to be transfered to the Kanban-storage. For the transition into a Kanban stock we have to create so called "Transition Kanban cards"which can't be done via SAP!

4.2.Creation of transition cards

For the creation of these "transition cards" this little Excel tool ("Manual_KANBAN_card.xlt") can be used.

Please fill in the information in line 2 which should appear on the card, then fill in the list of Kanban-IDs of the bins which should get such a initial "transition card".

You can get the necessary information out of SAP-transaction **PK18** "Evaluation of Kanban controlcycles"

Max. 20 cards can be created in 1 turn.

Then click the Button ▢ Create cards .

For each Kanban-ID a separate sheet with a Kanban-card will be created.

These cards can be printed out to label the Kanban bins and the existing barcode can be used for the first EMPTY-scan to start replenishment.
After the printout of the cards the sheets with these cards can be deleted with the button ▢ Cancel cards on the sheet "data".

Please note:

If the existing stock is higher than the calculated capacity of the new Kanban controlcycle, the leftover has to be **used up first** (without using Kanban cards).
If the new Kanban controlcycle has more bins than the current stock is covering, the rest of the cards should be

EMPTY scanned, **not at once** but step by step, to avoid a bottleneck situation at the supplier (SUPPLIER).

5. Operating

5.1 Kanban-board

5.1.1 Demand source overview
The "Demand source overview" will be started with the SAP-transaction "**PK13N**" or using the Kanban-Cockpit transaction "**ZKanban**".
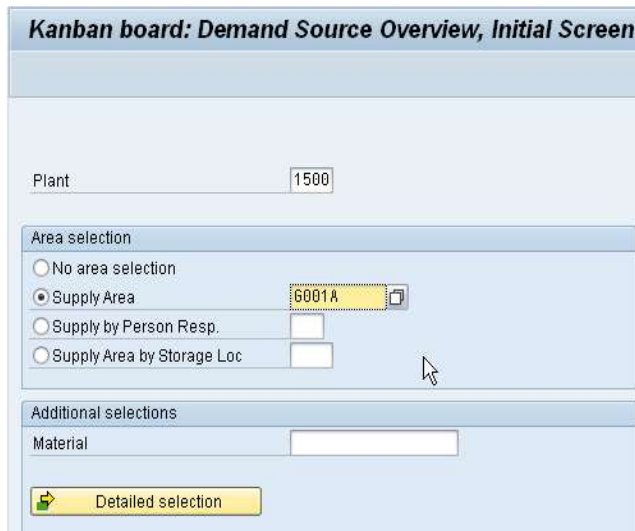
In the initial screen the selection could be done by Supply area, by Responsible for Supply area (Each supply area is allocated to a responsible MRP-cotroller (x**K**x) see chapter 3.1.1) and also by Supply areas by a storage location. With this selection, all Kanban-parts of the chosen storage location will be listed.

With the field "material" a single part-number can be selected and all controlcycles of this part-number will be listed.

With "Detailed selection" more detailed delimitations are possible.

5.1.2 Setup of Kanban-board

Change the bin/Kanban display:
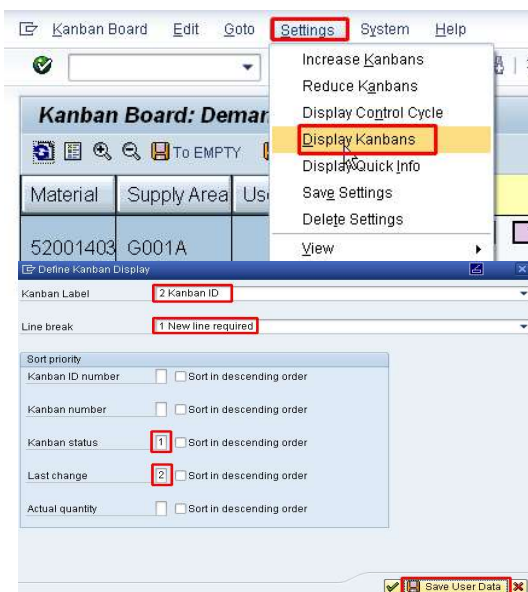
To change the bin/Kanban display use menu "Settings" and choose "Display Kanbans".

SUPPLIER standard setup:

Bins are horizontally sorted

1. By status (ascending)

2. By last change (ascending)

These adjustments have been proven as reliable to trace back possible troubles.

Don't forget to "**Save**" (Save User Data) the changes.

Change the display of the columns:
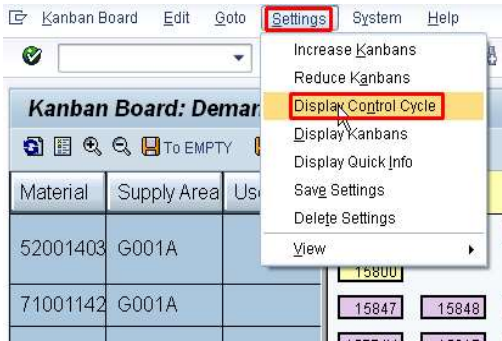
To change the column display use menu "Settings" and choose "Display controlcycles".
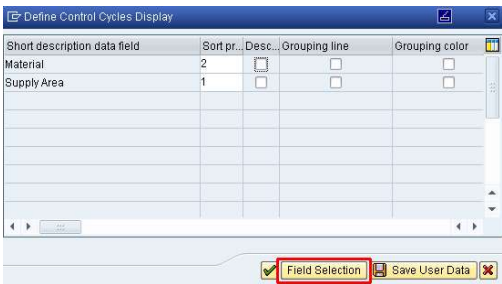
Use the button "Field selection" to replace the fields which should be displayed.
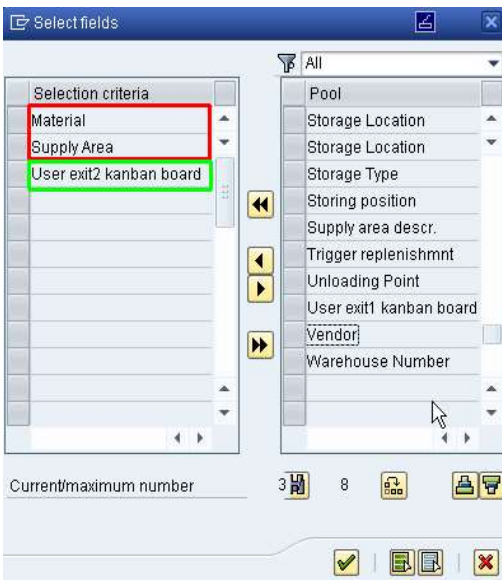
There has been programmed a special field to display the urgency of the controlcycles. This field is named "User-exit2".

This urgency is defined as a ratio of "total number of bins" divided by the "number of empty bins". (e.g. total are 11 bins and 6 bins are empty, so the ratio is 1.83)

The most urgent ratio is 1.0, which means all bins are empty.

This field can be used to sort the controlcyles by urgency.
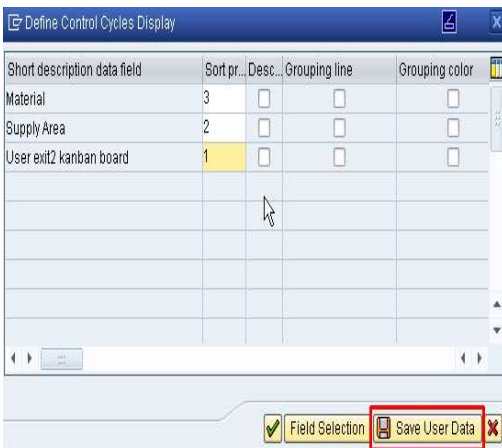
The fields will be sorted in order of the "priority" which is defined for each field.

Example (mostly used in SUPPLIER-Production):
Priority 1:   User-exit2 (Urgency)
Priority 2:   Supply area
Priority 3:   Part-number

Don't forget to "**Save**" (Save User Data) the changes.

5.2 Kanban-correction

If there goes something wrong during the status change of a Kanban-bin (e.g. The PO could not be created because this material number is blocked from another user) the bin color changes to "white with a red border" 15751 which signs a Kanban bin as "incorrect".

With the "Kanban-correction" these **faulty** or **incorrect** bins can be corrected. Also inadvertently done status changes can be undo.
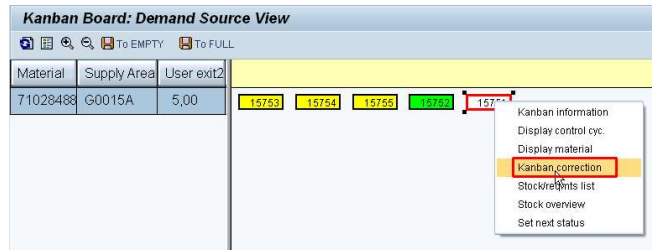
Right click on the bin which should be corrected and then choose "Kanban-correction"
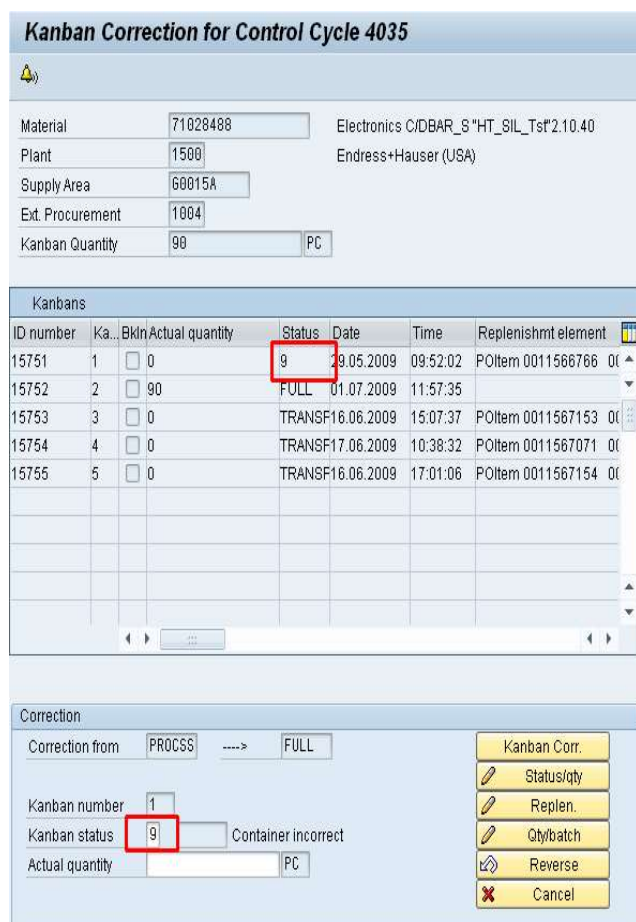
Doubleclick the line, of the bin, which should be corrected. Status "**9**" stands for "**Container incorrect**". To reverse another status change, choose the line to correct and doubleclick it.

Then the correction window appears underneath

To repeat an unsuccessful status change click the button "**Kanban-correction**".To set a specific status, choose the status in the field "Kanban-status" and click the button "**Status/qty**".

To undo a status change, only the button "**Reverse**" must be clicked. All background activities will be cancelled and the previous status will be set again.

After leaving the Kanban-correction all changes are saved automatically.

Please note:

This Kanban-correction can only be done by the Kanban-experts with special authorities.

    If a Kanban status "PROCSS" has to be undo, SUPPLIER has to be informed because status PROCSS means: purchase order in CONSUMER and also Sales order in SUPPLIER is created. The PO will be deleted automatically but not the SO. SO SUPPLIER has to cancel the corresponding SO manually!

5.3 Peaks in demands (project demands)

    A fundamental rule for any known future peak in demands caused by a big customer order (project) is an **intensiv communication** between consumer (CONSUMER) and supplier (SUPPLIER). As soon as SUPPLIER knows about these additional demands, they can take the necessary measures, together with the CONSUMER,

to fulfill them. So the sooner SUPPLIER knows, the better it is. There are different possibilities what to do. Each of them will be described in detail:

- Increasing the number of bins

- Event-driven Kanbans

- Creating additional PO's manually besides the controlcycle

5.3.1 Increasing the number of bins
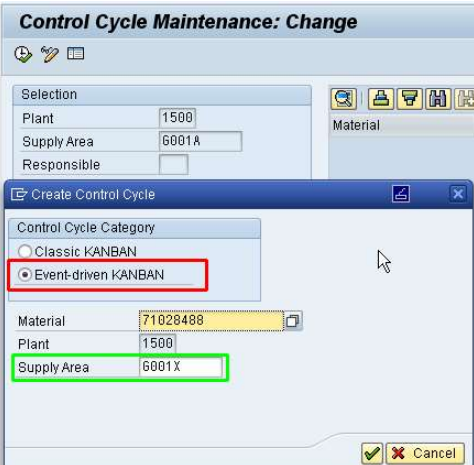
The first possibility is, to create additional bins in the affected controlcycle and then scan them empty. Afterwards these additional bins must be locked (see chapter **Error! Reference source not found.**), to avoid a repeated Empty-scanning. If a locked bin will be empty-scanned, the status changes to WAIT and the bin could be deleted again (see chapter 3.2.4).

Please note: This can all only be done if **SUPPLIER has enough stock** for these additional demands and **has agreed** to this procedure!

5.3.2 Event-driven Kanban

If there are part-numbers which there's more frequently the need of additional bins it would be worthwhile to create so called "Event-driven Kanban controlcycles". This kind of controlcycle allows adding very easy additional bins which will be filled only once and after the second empty scan they vanish again.

Event-driven controlcycle don't have any bins. If there's an additional demand, there can be activated any number of bins which will be used only once, to cover these additional demands.

Event-driven Kanban	
	PKMC: It is necessary to create an own supply area for each storage location for these "special" controlcycles. Please choose "Event-driven Kanban" after starting PKMC. Please see chapter 3.2.1 "Creation of controlcycle" for more information how to create a new controlcycle.
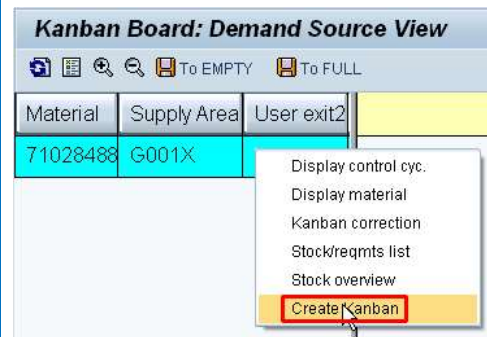
Event-driven Kanban	
	Usage: If you need an additional bin, right click on the controlcycle and choose "Create Kanban"
	Click on the button "**Create Kanban**" and an empty scanned bin will be created.
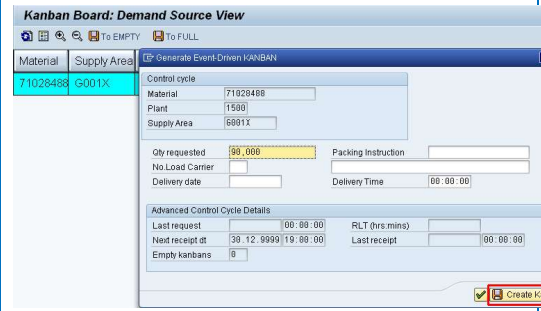
Please note: This also can only be done if **SUPPLIER has enough stock** for these additional demands and **has agreed** to this procedure!

5.3.3 Creating additional PO's manually

The third possibility is, to create additional PO's beside the normal CONSUMER-Kanban supply, which will be handled completely separated from this automatic process on both sides. Following steps have to be done:

- A "normal" PO (PO-type **NB**) has to be created manually with the additional quantity. Purchasing group mustn't be **GK1** to **GK9,** to avoid the creation of a Kanban-Sales order in SUPPLIER.

- Order will be transferred via EOI to SUPPLIER and creates a "normal" SO for CONSUMER-supply.

- SO will be proceeded manually as any other SO for CONSUMER-supply. SUPPLIER takes the necessary measures to fulfill these additional demands.

- Material will be shipped as a normal CONSUMER-supply "without" Kanban-card because there's no corresponding Kanban-bin on the CONSUMER-side.

- Material must be received, stocked and consumed as a normal CONSUMER-supply material, completely besides the Kanban-stock in the CONSUMER-production.

Please note: This can only be done after **detailed coordination and agreement** about quantities and dates, **between CONSUMER and SUPPLIER**.

5.4 Statistic evaluation

5.4.1 Evaluate Kanbans without status changes
With the program ‚ZMZKAN08' "Kanban without status change" Kanbans can be found out, which the last status change has been done before n hours. This means there must have been a problem which prevented any further status change.

KANBAN ohne Statuswechsel

Currently we have the restriction that we can't evaluate max. 99 hours delay. That could be probably not enough to use this tool for the CONSUMER-Kanban.

We are working on this issue!

Anyway, this tool can for example be used to check if there are any Kanban's in the CONSUMER which are more than 4 hours on status EMPTY because normally each empty bin of an CONSUMER-Kanban Controlcycle must be set max. 2 h later to status **PROCSS "**Container in process" by a cyclic job which runs every two hours.

The created list shows all Kanbans at which the last status change was longer than **n** hours ago.

5. 4 Evaluation of Kanbans with MCQ.

There exists another transaction which can be used for different analyses in the Kanban environment. It is called "**MCQ.**"

This is a SAP standard transaction with functions which are very similar to MC02. There can be selected plant specific data of controlcycles with different select options.

6. Appendix
6.1 SAP-authorities

SAP-authorization	authorized transactions
Kanban-normal	ZKanban, PK13n PK12n, PKBC
Kanban-extended	All Kanban-transactions except PK05 and PK31
Kanban-extra	All Kanban-transactions

6.2 PK-transactions

Transaction	Function
PKMC	Controlcycle maintenance (Create/Change/View)
PK05	Supply area create, change and view
PK05S	Quick: Supply area create, change and view
PK10	Mass-change Kanban-controlcycles
PK11	Kanban-Plant overview
PK12n	Kanban-board Source view
PK13n	Kanban-board demand view
PKBC	Kanban-impulse (Full-/Empty-scan with Barcode)
PK18	Controlcycle- and Kanban-Evaluation
MCQ.	Kanban-analysis
PK31	Kanban-correction
zKanban	Kanban-Cockpit
ZMZKAN02	Evaluation: Kanban Status-changes
ZMZKAN08	Evaluation: Kanban without Status-changes
ZMZKAN09	Supplier Kanban: Check Master data / Update Purchase order

Transaction	Function
PK01 (obsolete)	Create controlcycle
PK02 (obsolete)	Change controlcycle
PK03 (obsolete)	View controlcycle

6.3 Checklist for the changeover

Changeover to CONSUMER-Kanban		OK
Changings in material master	MM02	
Purchasing Group to ***K*** USA: GK1 to GK9 China: SK1 to SK9 India: AK1 to AK9	MM02, purchasing	
Goods receipt processing time (Average transport time from SUPPLIER to CONSUMER + internal handling time CONSUMER) USA: **"4"** workdays China: **"7"** workdays India: tbd	MM02, purchasing	
MRP-type "**ZK**"	MM02; MRP 1	
MRP-controller to ***K*** USA: GK1 to GK9 China: SK1 to SK9 India: AK1 to AK9	MM02; MRP 1	
Fixed lot size or min. and max. Lot size same than bin quantity	MM02; MRP 1	
Rounding value same than bin quantity	MM02; MRP 1	
Remove Reorderpoint	MM02; MRP 1	
Planned delivery time to"**3**" days (Internal handling time SUPPLIER + Time shift between CONSUMER and SUPPLIER (Normally **3-5** days))	MM02; MRP 2	
SchedMargin key: Must be "**R**"	MM02; MRP 2	
Safety time indicator "**2**"	MM02; MRP 2	
Safety time = Safety time from Kanban-calculation	MM02; MRP 2	
Remove safety stock	MM02; MRP 2	

Changeover to CONSUMER-Kanban		OK
Storage location MRP indicator "**1**" (necessary for Controlcycle-creation)	MM02; MRP 4 / Kanban storage location	
All other fields must be empty!	MM02; MRP 4 / Kanban storage location	
Storage bin: Coordinate / place where the material physically is stored (shelve position). This information will be printed on the Kanban card.	MM02; Plant data /stor.1 for Kanban storage location	
Changings in info record	ME12	
Planned delivery time = same than in material master	Purch. Organization Data 1	
Purchasing group = same than in material master	Purch. Organization Data 1	
Standard quantity = Quantity per bin	Purch. Organization Data 1	
Minimum quantity = Quantity per bin	Purch. Organization Data 1	
Changings in source list	ME01	
Fixed source of supply: Must be checked √	Source list	
Usage in MRP: Must be "**1**"	Source list	
Kanban preparations		
Create supply area	PK05	
Create controlcycle	PKMC	
Empty the storage location MRP indicator (only necessary for Controlcycle-creation)	**MM02; MRP 4 / Kanban storage location**	
Prepare Kanban shelve / label storage position	Production	
Transfer existing stock to Kanban-shelve and repack into Kanban bins	Production	
Create the transition Kanban cards and label the Kanban bins	Excel tool	

6.4 Containers / bins

Matno.	Short description	Dimensions
71083805	Carton "B3"	300x200x120
71083806	Carton "B4"	400x300x120
71083807	Carton "B5"	400x300x220
71083810	Carton "BA"	600x400x120
71083808	Carton "B6"	600x400x220
71083809	Carton "B7"	600x400x320
71034654	Half pallet	800x600
71034648	Full pallet	1200x800

Conclusion:

This proves that **Kanban** is an effective inventory management system which helps an organisation to achive the best results in the following key result ares of operation of any plant. JIT is implemented thru the Kanban way :

1) Only required / consumed material is getting ordered so unnecessary stocks don't get piled up.

2) Vendor is getting sufficient lead time to supply the right material on right time.

3) Right quantity & right quality of material is always on the shelf for production.

4) Even in unpredictable consumption items the material stocks are reviewed & getting replenished after consumption only.

5) Slow moving & non moving consumption material is not getting ordered & hence the stocks are controlled.

6) There is no last minute rush happening & despatches to customers are happening in time as per the promise date.

7) Kanban helps organisation to improve the **inventory turn** which is a one of the most important key result area for any organisations success.

8) Since the right material & right qty is received in the plant, it saves huge storage space which can be utilized for productive work.

Refernces:

1) Kanban - Wikipedia, the free encyclopedia.

2) Various literature on www.google.co.in