

Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy

“Fil Rouge” document – Cotton Blockchain Pilot Storytelling

As part of UNECE-UN/CEFACT project *Enhancing Transparency and Traceability for Sustainable Value Chains in the Garment and Footwear Industry* and in the context of the first pilot, this document aims at i) describing the story behind the value chain actors’ needs for the blockchain solution supporting the pilot project and, ii) identifying which are the documents and data that need to be registered and exchanged on the blockchain system.

The story follows the sequencing of business processes mapped on the basis of the methodology outlined in the Explanatory note for Business Process Analysis (BPA) for the value chain and data model for traceability of information exchange (draft September 2020) (see ANNEX 2 – Generic Use Case – Cotton Value Chain).

Each chapter refers to a specific business process related the production and transformation of cotton. It includes a description of the activity and its periodicity, the documents exchanged between identified actors, and their roles in enabling traceability throughout the value chain.

This work draws upon the collection of the business process descriptions for the cotton value chain and of user stories provided by the partners of the pilot project. The user stories associated to a specific business process activity are included in the description phase. The user stories “standing-alone” are featured in a dedicated box “USE CASES”, at the end of the relevant business process.

Reference document: [Project document for a pilot on blockchain for traceability and due diligence in the cotton value chain and progress report](#) (draft April 2020)

Colour coding: **Red**: timing to be adjusted with pilot’s timeframe. **Green**: elements for the blockchain platform

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Chapter 01 - Planting and Cultivation of Cotton

The process participants are cotton farm, farm supplier, farm cooperative. The process can begin when information for crop planning is available.

1.1

From the outset, the farmer plans the cotton crop and plans initial seed and fertilizer orders **once a year, in January** most likely. **The farmer registers on the blockchain system the plan of crop and potential additional documents.**

1.2.1

The order/delivery seed order is sent by the farm to the farm supplier delivering the seed, **once a year, in February** most likely. **The farm registers on the blockchain system the order from farmer to farm supplier, and the invoice from farm supplier to farmer. Additional documents can be uploaded on the system in regard to the availability of the seed, the delivery date from farm supplier to farmer, and delivery location from farmer to farm supplier (e.g. SMS). US/Claim: put the orders of crops in the system**

1.2.2

The order/delivery fertilizer order is sent by farm to farm supplier who delivers the fertilizer, three times a year **in March, May and July**. **The farmers registers on the blockchain system the order from farmer to farm supplier and the invoice from farm supplier to farmer. Additional documents can be uploaded on the system in regard to the availability of fertilizer, delivery date from farm supplier to farmer and the delivery location from farmer to farm supplier (e.g. SMS). Claim: List of chemicals used for fertilizing (put the orders of crops and list of chemicals in the blockchain system)**

User story 01 Planting and Cultivation of Cotton: In order to avoid using hazardous chemicals during farming, *as a farmer, I want to claim the chemical inventory list of fertilizer supplier, so that the cotton product compliance conforms with ZDHC MRSL, and avoids the use of hazardous chemicals in the next process steps.*

1.2.3

The order/delivery crop protection appliance order is sent by the farm to the farm supplier who delivers the crop protection appliance, **once a year in May or June**, most likely. **The farmer registers on the blockchain system the order from farmer to farm supplier and the invoice from farm supplier to farmer. Additional documents can be uploaded on the system in regard to the availability of crop protection appliance and delivery date from farm supplier to farmer, the delivery location from farmer to farm supplier (e.g. SMS).**

1.3

The production planting and farmer grows the cotton crop, **once a year from March to September** most likely. Once ready, the crop is harvested by the farmer who sends estimated harvest to the farm cooperative, **once a year in September or October**, most likely.

1.4

The farmer registers on the blockchain system information/document on expected yield to the farm cooperative (e.g. SMS or e-mail). The cotton is ready for the farmer to harvest it.

User story 02 Planting and Cultivation of Cotton: In order to avoid using hazardous chemicals during farming, *as a farmer, I want to provide an in-check report of my chemical inventory list (CIL), so that I can proof my chemical management performance.*

Chapter 02: Cotton harvest identification & transfer from farmer to ginner

The process participants are Farmer, cooperative (optional), Cotton Purchaser, Ginner, Id Provider/Validation party (sometimes the verification Party is also the ID provider).

The process can begin when the cotton has been harvested by the farmer.

2.1 Transfer of cotton to a cooperative

If the farmer is member of a cooperative, cotton is sent by the farmer to a cooperative, where it is mixed with other farmers' cotton, **once a year (complement with data about required documents to be registered on the blockchain system).**

2.2 Storage of cotton

The cotton is stored in bags at cooperative warehouse when it is hand harvested (e.g. Egypt), or in modules (of approx. 9500 kgs.) when it is mechanically harvested, **once a year**. If the farmer is part of a cooperative it is stored at the cooperative warehouse. Note that in the case when a farmer is --member of a cooperative, the traceability of the actual farmer/crop field is lost because the cotton from different farms is mixed together by the cooperative **(complement with data about required documents to be registered on the blockchain system).**

2.3 Cotton module identification

If cotton is not sold before ginning the farmer gives an ID to the cotton module. This option is common in countries where the harvest is mechanical, **once a year**. **The identification document is registered on the blockchain system if applicable (complement with data about required documents to be registered on the blockchain system).** The ID is marked on the module. In some cases, the information included in the identification document are also stored by the farmer in a RFID enabled device attached to the module for faster management at the ginning facility

2.4 Farmer contracts Ginner

Farmer contracts ginner for ginning services. In most cases, ginner are contracted by farmers for the service but in some cases the ginner acts also as a trader and purchases the cotton,

once a year. The ginning service contract can be registered on the blockchain system or the purchase contract, if applicable.

2.5 Sale / purchase of cotton at an auction

If the cotton is sold before ginning, the cotton purchaser signs a purchase contract with farmers / cooperatives. This option is common in countries where farmers are small scale.

The purchaser can be a middle-man, and the contract resold to another purchaser **once a year.** The transaction contract can be registered on the blockchain system if applicable and a record of the contract can be sent to local authorities if required by local law. Typically, it is a paper document.

2.6.1 Cotton bags classification and identification by verification party

If local law or business practices require the classification of cotton bags, the verification party (in Egypt Catgo) assigns a cotton variety, quality class and other parameters an ID, **once a year.** In Egypt, according to the law, cotton bags are given a unique ID by Catgo that issues a document recording all the information about each cotton bag, including cotton parameters, grade, origin, owner and ginning facility of destination, which can be registered on the blockchain system, if applicable. Typically, it is a paper document.

2.6.2 Cotton bags classification and identification by buyer

If a verification party is not required for classifying the cotton, this is done by the buyer or seller who also assigns an ID to the cotton bag or module. For example, In India the classification is usually performed by the buyer.

2.7 Cotton purchaser contracts ginner

Cotton purchaser contracts the ginner for ginning services. In most cases ginner are contracted by cotton purchasers for the service, **once a year.** In India the ginner may also play the role of the cotton purchaser from a previous cotton purchaser or a farmer. **The documents exchanged are the ginning service contract or the transaction contract in some cases – these documents can be registered on the blockchain system, if applicable.**

2.8 Cotton put on truck for transport to ginner

In most cases the transportation is part of the ginning services and is carried-out by the ginner, in other cases by the farmer. In Egypt transportation is strictly controlled by Authorities (CATGO) to avoid mixes of different types of cottons. If cotton is stored in modules it is carried by very large specialised trucks that can load 1 or max 1 and a half modules, **once a year.** In Egypt, the classification card is a required document for transportation, it includes the destination facility and a cotton bag cannot enter a ginning facility without the classification card – if applicable, these documents can be registered on the blockchain system.

Eventually the cotton bags or modules are stored at the ginner's factory.

USE CASES

User story 03 Cotton harvest identification & transfer from farmer to ginner: *As a Cotton trader/farmer or farm group, I want to upload the Transaction Certificate, Farm Scope Certificate, test report (GMO-free test report, pesticide free report, quality-parameter report) about selling organic seed cotton to a ginning mill, so that I can demonstrate the quality, quantity and certification status (and the year of harvest) of the organic cotton to the ginning mill.*

Chapter 03: Ginning & transfer to Spinner

The process participants are Ginner, Cotton purchaser, Transporter, Spinner, Verification party (sometimes the verification party is also the ID provider). The process starts when the cotton bags or modules are delivered at the ginner's facility.

3.1 Storage at ginning facility

Cotton bags or modules are stored at Ginner's facility. In Egypt storage is kept in separated spaces, by Cotton Purchaser and by classification, **once a year**. The identification/classification document issued by the verification party or by the party contracting with the ginner (i.e. the cotton trader/purchaser or the farmer) is attached to the bag or module can be registered on the blockchain system (complement with data about required documents to be registered on the blockchain system).

3.2 Final quality verification of the cotton bag

If local legislation or business practices require a further check, cotton bags are inspected, variety and quality are confirmed by the verification party, **once a year**. **Inspection result issued by the verification party is added to the bag identification/ classification document – if applicable, it can be registered on the blockchain system.**

3.3 Cotton bag classification revised

If Cotton bag quality verification fails a revised classification is given to the cotton bale. **The revised classification document can be uploaded on the blockchain system, if applicable.**

3.4 Cotton blending plan

The cotton purchaser decides the blending to the required quality and communicates this to the ginner, **once a year**. (complement with data about required documents to be registered on the blockchain system).

3.5.1 Blend instructions communicated to ginner

Cotton purchaser informs ginner of the required blends, **once a year**. **The blend instructions sheet can be registered on the blockchain system, if applicable.**

3.5.2 IDs recorded and a lot ID assigned

IDs of cotton bags or modules used in the blending are recorded by the Ginner in a lot document and the lot is assigned an ID. **The lot document can be registered on the blockchain system, if applicable.**

3.6 Ginning

The Ginner starts the ginning. Ginner loads the blends to the ginning process, **once a year.** **(complement with data about required documents to be registered on the blockchain system).**

3.7.1 Formation of cotton bales

At the end of the ginning process Cotton fluff (Lint) is compressed in bales of standard weight., **once a year.** **(complement with data about required documents to be registered on the blockchain system).**

3.7.2

A Bale Id is assigned by the Ginner to each cotton bale, that can be traced back to the cotton bags that contributed to the bale blend. Also, the crop season is usually recorded with the bale, **once a year.** **ID of original cotton bags are kept in Bale ID document Bale ID is inked or attached to the bale by the Ginner – can be registered on the blockchain system, if applicable.**

3.7.3 Separation and collection of seeds

The ginning process allows the separation of seeds from fibre. The Ginner collects the seeds that are separated into: propagation seed, commercial seeds. Commercial seeds are then sold – usually by the Cotton purchaser –to other industries. Propagation seeds are sold to cotton farmers and in many Countries (including Egypt) the sale of propagation seed is heavily regulated and controlled by the Government. Seeds can also be left to Ginner in payment for the ginning services, **once a year.** **(complement with data about required documents to be registered on the blockchain system).**

3.7.4 Separation and collection of cotton linters and immature fibres

Shorter and immature fibres are separated during the Ginning. These fibres are collected by the Ginner but are property of the Cotton Purchaser. The waste is usually recycled in the cellulose pulp, industry ending up in either paper or textile viscose fibre, **once a year.** **(complement with data about required documents to be registered on the blockchain system).**

3.7.5 Collection of cotton waste

Generic cotton waste is generated during the Ginning, that is collected from the floor or on the workers garments, **once a year.** This waste is collected by the Ginner, and, usually remains property of the Ginner. The waste is usually recycled in the home furniture, padding industry. **(complement with data about required documents to be registered on the blockchain system).**

3.8 Cotton sold to spinner by Cotton Purchaser

The cotton purchaser signs a contract selling the cotton to the spinner, **once a year.** **The documents exchanged are the transaction contract and, in some countries, e.g. Egypt, a**

standard (unified) contract format exists for export – they can be registered on the blockchain system, if applicable.

3.9 Bales picked-up by transporter

Transporter picks-up cotton bales at the ginning factory, **once a year**. The documents which can be registered on the blockchain system, if applicable, are the shipping document issued by the cotton purchaser.

3.10 If destination is Export, Customs clearance

Customs clearance by the transporter, **once a year**. The documents exchanged are customs documents / declarations, which can be registered on the blockchain system, if applicable.

Eventually the bales are delivered to the spinning mill.

USE CASES

User story 04 Ginning & transfer to Spinner: *As a ginner, I want to upload the GOTS Transaction certificate, test report (GMO-free test report, pesticide free report, quality-parameter report) issued by the certification body in the blockchain, so that I can demonstrate that the spinner receives the lint cotton output/material matching with GOTS certificate approved on-site by the third-party certification body.*

Chapter 04: Spinning & transfer to dyer, bleacher, washer

The process participants are Trader / Raw Cotton Purchaser, Spinner, Dyer/Bleacher/Washer, Weaver, Transporter. The cotton has been delivered by the cotton trader to the spinning mill.

4.1 Cotton delivered by cotton trader

The cotton is delivered by the cotton trader / exporter **once a year**. The cotton trader registers on the blockchain system the shipping document from cotton trader. Other information that can be registered is the origin and bale lot number stored in the ERP of the spinner.

4.2 Cotton lab testing

The cotton quality is tested in the spinner lab **once a year**. The cotton trader registers on the blockchain system the internal lab testing document. Other data that can be registered is the information added to the bale lot number.

4.3 If Cotton Dyed in mass: Dyeing order to Dyer

If the cotton is dyed in mass: the dyeing order is sent to dyer **several times during the relevant season**. The order from the spinner to the dyer and order confirmation are registered on the blockchain system.

4.4 Send Bales to Dyer

The bales are picked by the transporter to be sent to the dyer **several times during the relevant season**. The shipping document is registered on the blockchain system.

4.5 Receive Dyed bales from Dyer

The bales are delivered by the transporter **several times during the relevant season**. The shipping document is registered on the blockchain system. Other data that can be registered is the dyeing information added to the bale lot number.

4.6 If “Make to order”: order received from weaver

The weaver sends the order to spinner **several times during the relevant season**. The order from weaver to spinner and the Order confirmation from spinner to weaver are registered on the blockchain system.

4.7 Check if yarn is in stock

Check if the yarn is in stock and send it to weaver **several times during the relevant season**. The packing list and shipping document from spinner to weaver are registered on the blockchain system.

4.8 if Make to Stock: seasonal production forecast

The production planning for the season or for the month is forecasted **several times during the relevant season**. The internal production planning document is registered on the blockchain system.

4.9 Cotton blending

Different qualities of cotton are blended **several times during the relevant season**. The information with bale lot number of blend component is record in the ERP.

4.10 Spinning batch: Phase 1, blowing, carding, drawing

The first phase of the spinning (blowing, carding, drawing) batch up to the point that potential defects can be managed and material reworked **several times during the relevant season**. The internal: creation of unique ID for work order and bales blend are recorded on the blockchain system.

4.11 Quality check phase 1

Final quality check for phase 1 takes place **several times during the relevant season**. After this point defects cannot be recovered. The internal quality check document is recorded on the blockchain system.

4.12 If quality check pass. Spinning batch: Phase 2, rowing, spinning, winding

In case the quality check passes, the spinning batch phase 2 takes place (rowing, spinning, winding) **several times during the relevant season**. The Production steps to the workorder are recorded on the blockchain system.

4.13 Yarn finishing

The yarn can be finished with steaming and or gassing **several times during the relevant season**. The production steps to the workorder are recorded on the blockchain system.

4.14 If requested yarn doubling and twisting

The yarn can be single or composed of two or three single yarns twisted (If requested, yarn doubling and twisting) **several times during the relevant season**. The Production steps to the workorder are recorded on the blockchain system, together with individual yarns ID recorded in the workorder.

4.15 If the business model is “Make to Stock” Yarn sent to warehouse

The yarn can be stored in warehouse (If the business model is “Make to Stock” Yarn sent to warehouse), usually grey or basic colours **several times during the relevant season**. The document sent to the warehouse is registered on the blockchain system, together with the yarn lot number recorded in the ERP.

4.16 If yarn grey send yarn to dyer

The transporter picks the yarn and delivers it to the dyer (If yarn grey sends yarn to dyer) **several times during the relevant season**. The packing list and the shipping document are registered on the blockchain system.

4.17 receive back yarn from dyer

The transporter delivers the yarn to the spinner (back from the dyer) **several times during the relevant season**. The packing list and the shipping document are registered on the blockchain system.

4.18 Yarn delivery to weaver

The transporter picks the yarn and delivers it to the weaver) **several times during the relevant season**. The packing list and the shipping document are registered on the blockchain system from the spinner to weaver.

The yarn is eventually delivered to the weaver.

USE CASES

User story 05 Spinning & transfer to dyer, bleacher, washer: *As a standard / organisation consumer, I want to make sure that the wastewater from textile production processes shall be treated in a wastewater/effluent treatment plan (direct discharge) that is owned by the facility or operated as part of a municipal wastewater treatment plan (indirect discharge) (Common Effluent Treatment Plant (CETP), so that I can make sure that the ready-made garments I wear won't have been produced in a way that the wastewater and sludge will exceed values over the nationally regulated limit values or limit values that have been defined in a respective standard.*

User story 06 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the certificate (chem-check report) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard.*

User story 07 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the certificate (in-check certificate) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard.*

User story 08 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the certificate (clear stream certificate) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard.*

User story 09 Spinning & transfer to dyer, bleacher, washer: *As ZDHC, I want to ease the certification validation process and increase the security level of our certification process, so that I can reduce the bureaucracy burden and ease the certification validation process.*

User story 10 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the organic cotton certificates I receive from agricultural partners and certification entities, so that I can show the traceable origin of the cotton fibres I use.*

User story 11 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the documents, reports and videos/pictures related to our Initiatives and programs in support of cotton value chain sustainability, so that I can show the support I provide to local communities, in line with SDGs in order to get appreciation and support from my supply chain partners. Together we can be stronger.*

User story 12 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload farmers and students stories of agricultural and textile schools we support for skills development and youth employability (pictures, videos and reports), so that I can show how, in a win-win framework, I support youth skills development for their inclusion in the cotton-textile labour market.*

User story 13 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload the ZDHC chemical inventory, so that I can show that my chemical management complies with ZDHC standard.*

User story 14 Spinning & transfer to dyer, bleacher, washer: *As a spinning mill, I want to upload certifications we hold and frameworks we are committed to (GOTS, OEKOTEX, Tessile Salute etc, UN Global Compact etc), so that I can show voluntary certifications I hold and frameworks I am compliant to.*

User story 15 Spinning & transfer to dyer, bleacher, washer: *As a spinner, I want to upload the GOTS Transaction certificate issued by the certification body in the blockchain, so that I can demonstrate that the fabric maker receives GOTS certified yarns matching with GOTS certificate approved on-site by the third-party certification body.*

User story 16 Spinning & transfer to dyer, bleacher, washer: *As a manufacturer, I want to help to combat pollution by using the analysis tool DETOX TO ZERO by OEKO-TEX® offered by OEKO-TEX, so that they can assess the status of our chemicals management systems and the quality of our waste water and sludge, so that we can have these documented through independent verification. The result of DETOX TO ZERO by OEKO-TEX® is a status report which*

can confirm compliance with the goals of the Greenpeace Detox campaign or the ZDHC MRSL requirements. This status report will be uploaded to the blockchain in order to create transparency.

Chapter 05: Dyeing, bleaching, washing & transfer to weaver

The process participants are dyer/bleacher/washer, Transporter, Weaver. The process can begin when the order of dyeing, bleaching, washing service is received from weaver.

5.1 General Sales/Service Terms agreement between dyer/finisher and weaver

The process starts with the agreement upon the general sales/service terms between the dyer/finisher and weaver **several times during the relevant season**. The general sales / service terms agreement is registered on the blockchain system.

5.2 Order of dyeing, bleaching, washing service from weaver

The dyeing order is normally sent by the weaver company to dyer/bleacher/washer depending on the fabric they have to produce in terms of yarn dyed quantities they need to weave **several times during the relevant season**. The order from weaver, the order confirmation from Dyer/bleacher/washer to weaver are registered on the blockchain system. Additional data / information to be recorded on the system is the lot number sent by the weaver to the dyer.

User story 17 Dyeing, bleaching, washing & transfer to weaver: *As a scheduler, I want simplicity and clearness in the numbers and codes, so that no mistakes are possible.*

5.3 Grey yarn delivered to Dyer/ bleacher/ washer and stored in dyer/ bleacher/ washer warehouse

The dyeing order is normally sent by the weaver depending on the fabric they have to produce **several times during the relevant season**. The Packing list from weaver and Shipping document from transporter delivered to dyer/ bleacher/ washer are registered on the blockchain system. Additional data / information to be recorded on the system is the reference to unique lot number from weaver registered in the dyer ERP, internal workorder added, linked to the weaver lot number.

User story 18 Dyeing, bleaching, washing & transfer to weaver: *As a scheduler, I want good planning within the season of the year, so that I can save transportation costs and get environmental benefit.*

5.4 Dyeing process

The yarn goes through various treatments for dyeing **several times during the relevant season**. The Internal work order is registered on the blockchain system with the dye bath number and dyeing colour recipe added to workorder; the internal documents to prove the validity of the dyeing process can also be recorded in the system with the information stored in the ERP in workorder.

User story 19 Dyeing, bleaching, washing & transfer to weaver: *As a worker, I want to save dyeing substances and water, so that I can reduce my environmental impact.*

5.5 Quality check

The dyed yarn has to be checked for quality in the laboratory of the dyer for both colour accuracy and for cone internal-external colour homogeneity **several times during the relevant season**. The Internal documents to prove the validity of the dyeing process is registered on the blockchain system with the information stored in the ERP in workorder.

5.6 If quality check fails yarn re-dyed

If quality check fails yarn re-dyed, the dyeing process is redone homogeneity **several times during the relevant season**. Internal work order, with dye bath number and dyeing colour recipe added to workorder is registered on the blockchain system.

5.7 Sample archiving

The sample of dyed yarn is archived for future reference along with workorder in the dyer archive **several times during the relevant season**. The archive card created is registered on the blockchain system with the work order with full information stored along with dyed yarn sample.

5.8 Dyed yarn delivered to weaver

The dyed yarn is picked and delivered by transporter to weaver **several times during the relevant season**. Shipping document delivered by dyer to transporter is registered on the blockchain system.

Eventually the dyed yarn is delivered to the weaver.

USE CASES

User story 20 Dyeing, bleaching, washing & transfer to weaver: *As a Standard Organization / Consumer, I want to make sure that a dyestuff cannot be used for production if it has been identified to be based on chemicals that are listed in Restricted Substances Lists (RSL) or Manufacturing Restricted Substances Lists (MRSL), so that the ready-made garments I wear won't contain harmful substances that could impair my health.*

User story 21 Dyeing, bleaching, washing & transfer to weaver: *As a dyeing mill, I want to Upload the certificate (chem check report) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard.*

User story 22 Dyeing, bleaching, washing & transfer to weaver: *As a dyeing mill, I want to Upload the certificate (in check report) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard.*

User story 23 Dyeing, bleaching, washing & transfer to weaver: *As a dyeing mill, I want to Upload the certificate (clear stream certificate) and get the approval from ZDHC, so that I can show that my chemical management complies with ZDHC standard*

User story 24 Dyeing, bleaching, washing & transfer to weaver: *As ZDHC, I want to ease the certification validation process and increase the security level of our certification process, so that I can reduce the bureaucracy burden and ease the certification validation process.*

User story 25 Dyeing, bleaching, washing & transfer to weaver: *As a manufacturer, I want to help to combat pollution by using the analysis tool DETOX TO ZERO by OEKO-TEX® offered by OEKO-TEX®, so that they can assess the status of our chemicals management systems and the quality of our waste water and sludge so that we can have these documented through independent verification. The result of DETOX TO ZERO by OEKO-TEX® is a status report which can confirm compliance with the goals of the Greenpeace Detox campaign or the ZDHC MRSL requirements. This status report will be uploaded to the blockchain in order to create transparency.*

User story 26 Dyeing, bleaching, washing & transfer to weaver: *As a manufacturer, I want to make our use of textile and leather chemicals, colourants and auxiliaries safer and more transparent by certifying them with the ECO PASSPORT by OEKO-TEX®, so that we can upload it to the blockchain and together strengthen processes and product safety at every stage of the value chain through ECO PASSPORT by OEKO-TEX®'s comprehensive and holistic strategy of chemical validation. This offers a comprehensive approach to the handling of chemicals and, ultimately, presents the supply chain with a unique insight into the chemicals used.*

User story 27 Dyeing, bleaching, washing & transfer to weaver: *As a fabric mill, I want to upload the GOTS Transaction certificate issued by the certification body in the blockchain so that, I can demonstrate that the Wet Processor receives the GOTS certified Fabric matching with GOTS certificate approved on-site by the third-party certification body.*

Chapter 06: Weaving¹ & transfer to Fabric Finisher(s)

The process participants are the spinner, Weaver, Finisher Garment manufacturer, Transporter. The process begins when the order is received by the weaver from the garment manufacturer.

6.1 Order received by garment maker

Garment maker (either the brand or a Brand subcontractor) sends order to the weaver **several times during the relevant season**. Order is entered in the weaver ERP. The order is received by the planning department who gives the proposed final ready to warehouse date. **The**

¹ It is worthwhile mentioning two very different weaving processes coexist in the supply chain: 1) The warp-weft/orthogonal weaving and 2) The knit weaving that use different types of yarn and completely different technologies. The storytelling here features the first weaving process.

garment maker order, the weaver confirmation order and the technical sheet sent by customers are registered on the blockchain system. Additional data to be recorded are the order received by the planning department who gives the proposed final ready to warehouse date.

User story 28 Weaving & transfer to Fabric Finisher(s): *As a commercial assistant, I want to have integrated data between customers and our system, so that there is no manual data enter, no input mistakes.*

6.2 Check if yarns are available in the yarn warehouse

The weaver ERP check if yarns are available in the yarn warehouse weaver **several times during the relevant season**. (complement with data about required to be registered on the blockchain system).

6.3 If yarn not available in warehouse, yarn order to supplier

If the yarn is not available in the weaver warehouse, weaver orders yarn to the spinner weaver **several times during the relevant season**. The Order from weaver to spinner and the order confirmation from spinner are registered on the blockchain system.

6.4 Yarn delivery to weaver

The transporter delivers the yarn to weaver **several times during the relevant season**. Quantities are checked against the order and registered into the stock system. The yarns packing list from spinner and the shipping document (example of a packing list) are registered on the blockchain system. Additional data / information to be recorded is the yarn batch ID recorded in the ERP.

User story 29 Weaving & transfer to Fabric Finisher(s): *As a warehouse assistant, I want to have integrated data between customers and our system, so that there is no manual data enter, no input mistakes.*

6.5 Laboratory check

The yarn quality and physical performances are checked **several times during the relevant season**. The internal Lab test results attached to the Yarn batch ID number are registered on the blockchain system.

6.6 Planning dept. send the production order to the warehouse

Planning department calculates the exact needs in terms of yarn to be taken and sends the production order to the warehouse **several times during the relevant season**. The data sent via the internal ERP system and the work order (technical production data sheet for the specific order) created and the work order including the relevant yarn batch ID are registered on the blockchain system.

6.7 If yarn is for warp is sent to yarn warping

(If yarn is for warp is sent to yarn warping) Yarn warping can be vertically integrated or subcontracted **several times during the relevant season**. The document released to the warehouse and the order to the warping department can be recorded on the blockchain system. Additional data / information to be recorded is the unique identifier created for the warp beam.

6.8 If Yarn needs sizing: sent to sizing dept.

(If Yarn needs sizing: sent to sizing department) Sizing to reinforce the warp yarn **several times during the relevant season**. The sizing process added to workorder can be recorded on the blockchain system.

User story 31 Weaving & transfer to Fabric Finisher(s): *As a weaving mill, I want to ensure I comply to the requirements of a voluntary sustainability standard, so that I can have better productivity and less quality problem I can receive certification to that standard*

6.9 Weaving

Various sub steps to insert the warp into the weaving machine, place the weft yarns and wave fabric **several times during the relevant season**. The document released to the weaving department can be recorded on the blockchain system, the same goes for the unique ID given to the weaved fabric piece, linked to the work order that includes warp and weft yarns IDs.

6.10 If fabric will be piece dyed: grey fabric quality check

(If fabric will be piece dyed: grey fabric quality check) The grey fabric is checked for visible defect and possible repair **several times during the relevant season**. If repair is need grey fabric sent to mending department. **Defect map added to workorder is recorded on the blockchain system**.

6.11 Delivery to dyeing / finishing subcontractor or internal dyeing/finishing dept

Fabric is rolled on big roll and sent the finishing dept. or subcontractor, adding together different orders to facilitate the production and increase the productivity **several times during the relevant season**. (complement with data about required documents to be registered on the blockchain system).

6.12 Dyeing / Finishing

As part of the dyeing and finishing process, if the fabric is a piece dyed it is dyed or printed and finished. If it is a yarn dyed only finishing is performed **several times during the relevant season**. Fabrics are washed. Also, de-sizing can be done. **The ID of the unique piece fabric is kept throughout the process and can be registered on the blockchain system**.

6.13 Fabric quality check

Each fabric quality is checked **several times during the relevant season**. The quality check (defects) data attached to the work order can be registered on the blockchain system.

6.14 If quality check pass: Delivery to garment maker

Transporter picks the pieces and delivers to garment maker **several times during the relevant season**. Delivery can be to Brand or to Brand's subcontractor. **The packing list from weaver to garment manufacturer and the shipping document can be registered on the blockchain system.**

Eventually the fabric is transferred to the fabric finisher / garment maker.

USE CASES

User story 30 Weaving & transfer to Fabric Finisher(s): *As a laboratory assistant, I want to control what the supplier declare in terms of quality and sustainability, so that I can ensure an easy exchange of technical documents or certification with the suppliers.*

User story 39 Weaving & transfer to Fabric Finisher(s): *As a fabric mill, I want to upload the GOTS Transaction certificate issued by the certification body in the blockchain, so that I can demonstrate that the Garment Maker receives the GOTS certified Fabric matching with GOTS certificate approved on-site by the third-party certification body.*

User story 40 Weaving & transfer to Fabric Finisher(s): *As a fabric mill, I want to upload proof of residual chemical testing report issued by a testing laboratory in the blockchain, so that I can demonstrate that the Garment Maker receives Fabric matching with buyer RSL requirements as confirmed by a testing laboratory.*

Alternative BPDs for BUSINESS PROCESS 06: Weaving & transfer to Fabric Finisher(s)

The process participants are the Weaver, Traceability Requester, ID Provider, Validation Party, Transporter. The process begins when the yarns and twines are spun and dyed/bleached, if necessary. Dyed and bleached yarns and twines are delivered to the weaver.

6.1 Receive customer order

Sales team receives order from a customer **on a daily basis**. **Sales staff receive signed order papers via e-mail which can be registered on the blockchain system. Additional data to be registered can be the mentions article, the amount of meters, colour, delivery date and price.**

User story 32 Weaving & transfer to Fabric Finisher(s): *As a customer service offer, I want to deliver the best possible quality, so that the customer places new orders.*

6.2 Check stock for availability of fabric

Sales team checks availability of fabric **on a daily basis** in internal management system.

User story 33 Weaving & transfer to Fabric Finisher(s): *As a Warehouseman/Storeman, I want to service my colleagues from customer service and production as smoothly as possible, so that our customer receives the order on time.*

6.3 Prepare order

The fabric order is prepared (size, measure, cut), placed at manufacturer / subsidiary manufacturer (if applicable). Then, the internal shipping department labels and checks out

the fabric. Article number defines the country of production. Internal sales team places order in internal management system. **Data to be registered on the blockchain system include the mentions article, amount of meters, colour, delivery date and price.**

6.4 Produce order

Product order: the availability of the yarn in stock is checked, then it is booked / reserved in the system, getting prepared for weaving and woven. **(complement with data about required documents to be registered on the blockchain system).**

User story 34 Weaving & transfer to Fabric Finisher(s): *As a head of production, I want to make sure that my production delivers on time, quality is perfect while maintaining workload, so that the customer is satisfied, and the production works economically responsible.*

User story 35 Weaving & transfer to Fabric Finisher(s): *As a weaver, I want to make sure that all weaving machines are well maintained and functioning at all times, so that production has no interruptions (avoid delay).*

User story 36 Weaving & transfer to Fabric Finisher(s): *As a buyer, I want to have responsible and reliable suppliers, so that my customer's order can be produced without delay.*

6.5 Quality check

Quality check: the fabric is moved to fabric inspection in order to check the quality of the fabrics. **(complement with data about required documents to be registered on the blockchain system).**

User story 37 Weaving & transfer to Fabric Finisher(s): *As a quality assessor, I want to make sure the fabric is of finest quality and that it meets the customer's requirements, so that the customer only receives first choice fabrics.*

6.6 Pre-treatment /Finishing / Printing

Pre-treatment /Finishing / Printing: the fabric is moved from fabric inspection to be shipped to the finisher. The finisher does pre-treatment and finishing before sending the fabric to the printer. The printed fabric is sent back to the finisher which will apply the final treatment before sending to the customer / manufacturer. **(complement with data about required documents to be registered on the blockchain system).**

6.7 Reception of the fabric from finisher

Reception of the fabric by the customer / manufacturer from the finisher. **(complement with data about required documents to be registered on the blockchain system).**

6.8 Finished Fabric approved

The finished fabric is approved, moved to stock and prepared for shipment to the customer. **(complement with data about required documents to be registered on the blockchain system).**

User story 38 Weaving & transfer to Fabric Finisher(s): *As a customer service, I want to work with suppliers that comply with our quality standards and deliver accordingly, so that my order can be produced on time, with required quality and without aftercare treatment.*

6.9 Prepare shipment

The fabric is packed for shipment. (complement with data about required documents to be registered on the blockchain system).

6.10 Finished Fabric is shipped to customer

The finished fabric is shipped to the customer. (complement with data about required documents to be registered on the blockchain system).

6.11 Manufacturer receives fabric

The customer / manufacturer receives the fabric. Eventually the customer or CTS is in possession of finished fabric. (complement with data about required documents to be registered on the blockchain system).

Chapter 07: Fabric finishing, other treatments & transfer to Manufacturer

The process participants are the Weaver, Fabric Finisher, Garment Maker. The process begins with the delivery from weaver to dyeing / finishing subcontractor or internal dyeing/finishing department.

7.1 Fabric is delivered to finisher

The fabric is received by the finisher and stored in warehouse ready to be finished **several times during the relevant season**. If the finisher is a subcontractor, the packing List and shipping document are registered on the blockchain system, while if it is internal department, the order is recorded in the ERP with piece fabrics (roll) ID.

7.2 Finishing planning

The fabric (roll) data are managed in a separated and specific planning system in order to plan the different preparation and finishing machineries **several times during the relevant season**. The work order/planning document is created and registered on the blockchain system.

7.3 Finishing processes

The fabric is processed by several machines for: washing, bleaching, steaming, gassing mercerisation, brushing, calendaring, sanforising, etc. **several times during the relevant season**. Internal documents released to follow the single rolls can be registered on the blockchain system. Data and communication is done via internal planning system scanning the different phases.

7.4 Quality check

The quality check takes place **several times during the relevant season**, it can be internal or subcontracted. Each fabric is checked under the magnifying glass. Control is completed by

laboratory chemical and physical performances tests. The defect map and lab doc attached to workorder can be registered on the blockchain system.

7.5 Store to warehouse

Each single roll with its ID is stored to be shipped **several times during the relevant season**. Garment Maker is advised fabric is ready. Transmit to order to the warehouse for preparing and organize the transportation. (complement with data about required documents to be registered on the blockchain system).

7.6 Delivery to Garment Maker

The piece is delivered to the garment maker - **several times during the relevant season** - which can be the brand or a brand' subcontractor. Packing list and the shipping document workorder can be registered on the blockchain system.

USE CASES

User story 41 Fabric finishing, other treatments & transfer to Manufacturer: *As a warehouse assistant, I want to integrate the data with the supplier, so that there is no manual data entry and consequently, no input mistakes.*

User story 42 Fabric finishing, other treatments & transfer to Manufacturer: *As a control and laboratory assistant, I want to check the quality and technical - physical properties of final fabric in relation to the different specifications of the single products and the specific requirements of the different customers (almost each customers want their particular controls or quality requirements), so that I have strong connections between customer and suppliers on the quality and technical requirements, and simplified data interchange.*

Chapter 08: Garment or Product Production and transfer to Enoblement

The process participants are the Garment/Product Manufacturer, Brand Retailer, Traceability Requester, Transporter, Enoblement sub-contractor. The process can begin when the Garment manufacturer s in possession of the fabric with description and code. Traceability Requestor (brand) has communicated requirements. Any sustainability certification required has been done.

8.1

The fabric is registered as received and added to inventory by the Manufacturer and recorded by the brand (**seasonally - but can occur multiple times during the season**). The purchase order, transportation document are checked and matched in order to do incoming at Manufacturer's Warehouse – they can be registered on the blockchain system. Additional data to be recorded in the system are the email from the brand notifying the fabric supplier and manufacturer of the fabric ordered and received; also information about the stock level if necessary at the fabric supplier and manufacturer.

8.2

A specific fabric order for dedicated styles is prepared (**seasonally (but can occur multiple times during the season)**) to be shipped by truck by Tier 1 manufacturer to sub-contractor manufacturer and it is recorded upon arrival. Once received, it is loaded into the warehouse and stored to proceed with the order preparation. This is necessary for making shrink tests, making CAD, cut charts, drawing reports, drop tests. **The purchase order and transportation documents are checked and matched, in order to do incoming at Manufacturer's Warehouse, related Document of Transportation for the goods moving – they can be registered on the blockchain system. Additional data to be recorded in the system is the email: Sub-supplier manufacturer to be advised by tier 1 manufacturer on fabric shipped and model to be prepared; proforma invoice – working order.**

User story 43 Garment or Product Production and transfer to Enablement: *As a warehouse manager, I want to have an accurate picture of existing inventory and communicate directly with the brand the level of stock automatically via system, so that the factory facility is adequately supplied with fabrics and the fabric team is promptly informed if additional orders are needed.*

8.3

The Garment manufacturer undertakes the cutting **once during the seasonal order**: the cut charts are then prepared based on pattern provided by TIER 1 supplier. Placements and graphs are performed by sub-supplier. In this case the shirt production is centralized in the main office and no other external phases are performed. The order is processed, by transforming and adding details to the previous order form. To each cutting arrangement is assigned a progressive internal order number. In this way, the fabric will be associated to its cutting arrangement in order to avoid discrepancy in colour and texture. The logo is embroidered in the facility, as there is also an embroidery office. The embroidery phase follows the cutting phase and happens before assembling. **Manufacturer creates and sends a cutting order to its sub-supplier, which can be registered on the blockchain system, together with the cut arrangement provided by sub-supplier. Additional data to be recorded in the system is the email from Manufacturer order to tier 1 supplier with details for the order (technical sheet PDF).**

User story 44 Garment or Product Production and transfer to Enablement: *As a product developer / production manager, I want the cutting order to be assembled on time following the schedule and to be advised on status of the order, so that I can be advised early on any expected delays.*

8.4

The Garment Manufacturer undertakes the assembling (**once during the seasonal order. Multiple times during the season depending on re-orders**). The cut garments are not produced in batches but all at the same time, unless different fabric baths have occurred. In this case, different cutting and assembling orders are created. However, all orders are tracked even if they arrive simultaneously, because they are assigned two order numbers for order tracking. **Manufacturer creates and sends a façon order, technical sheet PDF and bill of**

Materials, which can be registered on the blockchain system. Additional data to be recorded in the system is the email from Manufacturer order to tier 1 supplier with details for the order. Internal technical sheets are updated during the production phases.

User story 45 Garment or Product Production and transfer to Enoblement: *As a product developer / production manager, I want the sample and production order to be assembled on time following the schedule and to be advised on status of the order, so that I can be advised early on any expected delays.*

8.5

The Garment Manufacturer undertakes the finishing (**once during the seasonal order. Multiple times during the season depending on re-orders**). The garments are then ironed and folded and prepared for shipment to the manufacturer. The garments stay approximately 1 week / 10 days for the 100% internal quality control phase. **Internal technical sheets are updated during the production phases – they can be registered on the blockchain system. Additional data to be recorded in the system is the email from Manufacturer order to tier 1 supplier with details for the order, Technical sheet PDF.**

User story 46 Garment or Product Production and transfer to Enoblement: *As a product developer / production manager, I want the sample and production order to be finished on time following the schedule and to be advised on status of the order, so that I can be advised early on any expected delays.*

8.6

The Garment/Product Manufacturer places an order for product enoblement /packing at tier 1 facility (**once during the seasonal order. Multiple times during the season depending on re-orders**). Finished garments are shipped from sub-supplier to tier 1 supplier. Garments are packed in branded polybags with barcodes into boxes. **The documents which can be recorded in the blockchain system are document of transportation and the invoice to brand. Additional data to be recorded in the system is the Email from Tier 1 Manufacturer to brand with details of the final delivery.**

User story 47 Garment or Product Production and transfer to Enoblement: *As a product developer / production manager, I want the enoblement order to be performed on time following the schedule and to be advised on status of the order, so that I can be advised early on any expected delays.*

8.7

The Validation Party certifies the item, “the TOP SAMPLE”, against a list of quality requirements (re-order the activity as quality check happens before and after the manufacturing) (**once during the seasonal order. Multiple times during the season depending on re-orders**). **The documents which can be recorded in the blockchain system are the document quality control Production Education Manual, the Recap excel file with defects**

assessed. Additional data to be recorded in the system is the email from the brand to the manufacturer with recap of the quality level with supplier and modifications to be performed.

User story 48 Garment or Product Production and transfer to Enablement: *As a quality controller, I want to assess as early as possible defects during the production phases, so that I can shorten the delivery and reduce the level of defects on final products.*

8.8

The ID provider (brand) gives the ID to the Manufacturer. The documents which can be recorded in the blockchain system is the masterfile from Brand to Manufacturer.

User story 49 Garment or Product Production and transfer to Enablement: *As a product developer / production manager, I want the manufacturer to speak my own coding language, so that there is no discrepancy on documents or confusion during purchase orders and developments.*

8.9

Transporter carries the product to the Central Logistic Hub (following the weekly delivery plan agreed with the Brand during negotiation). The documents which can be recorded in the blockchain system are relative documents whenever shipment occurs, document of transportation and the invoice. Additional data to be recorded in the system is the Email to Manufacturer and/or courier by the brand of the collection by transporter at manufacturer, (only if it manages the shipment). Otherwise, it gives approval at supplier to ship.

User story 50 Garment or Product Production and transfer to Enablement: *As a logistic manager, I want the goods to arrive properly packed and with the correct documents and complete information at warehouse, so that the incoming is smooth and quick.*

8.9

Transporter delivers the product from Warehouse to the final wholesale customer or DOS only if the shipment is upon the brand (following the weekly delivery plan agreed with the client during selling campaign). The documents which can be recorded in the blockchain system are the document of transportation and the invoice. Additional data to be recorded in the system is the email to customer and courier.

User story 51 Garment or Product Production and transfer to Enablement: *As a customer service manager, I want the shipment of undamaged goods that meet customers' requirements and the delivery planned with the customer, so that my service is excellent and I can obtain the highest level of customer satisfaction.*

The Manufacturer performs internally the final packaging activity before shipping from the warehouses directly to the brand's Logistic Hub, which later on will distribute the orders between wholesale customer and direct operating stores.

USE CASES

User story 52 Garment or Product Production and transfer to Enablement: *As a manufacturer, I want to make the safety of our products transparent by uploading the STANDARD 100 by OEKO-TEX® label to the blockchain, so that consumers can be certain that every component of the product, i.e. every thread, button and other accessories, has been tested for harmful substances and that the article therefore is harmless in human ecological terms.*

User story 53 Garment or Product Production and transfer to Enablement: *As a manufacturer, I want to make our production process transparent to all participants of the value chain with the STeP by OEKO-TEX® certification that offers the six pillars: Environmental Performance, Environmental Management, Social Responsibility, Quality Management as well as Health and Safety, so that we can upload the certificate to the blockchain and show that the ready-made garments are produced by environmentally friendly production processes, optimal health and safety protection and socially responsible working conditions.*

User story 54 Garment or Product Production and transfer to Enablement: *As a garment manufacturer, I want to upload the GOTS Transaction certificate issued by the certification body in the blockchain, so that I can demonstrate that the Importer / Brand /Retailer receives GOTS certified consumer goods, confirmed by a certification body as per order received from my buyer.*

User story 55 Garment or Product Production and transfer to Enablement: *As a garment manufacturer, I want to upload the GOTS Labelling release form issued by the certification body in the blockchain, so that I can demonstrate that the Importer / Brand /Retailer receives properly labelled GOTS certified consumer goods, confirmed by a certification body as per order received from my buyer.*

Chapter 09: Product Enablement and Packaging and transfer to "retailer"

Currently missing (complete if applicable)

User story 56 Product Enablement and Packaging and transfer to "retailer": *As a manufacturer, I want to make our production process transparent to all participants of the value chain with the STeP by OEKO-TEX® certification that offers the six pillars: Environmental Performance, Environmental Management, Social Responsibility, Quality Management as well as Health and Safety, so that we can upload the certificate to the blockchain and show that the ready-made garments are produced by environmentally friendly production processes, optimal health and safety protection and socially responsible working conditions.*

User story 57 Product Enablement and Packaging and transfer to "retailer": *As a manufacturer, I want to make the safety of our products transparent by uploading the STANDARD 100 by OEKO-TEX® label to the blockchain, so that the consumers can be certain that every component of the product, i.e. every thread, button and other accessories, has been tested for harmful substances and that the article therefore is harmless in human ecological terms.*

Chapter 10: Placement of Product in Stores or On-line for Sale

The process participants are the Brand, Consumer, Transporter.

10.1

The brand previews the buying proposal with discussion of feedbacks, local necessities and trend regarding collection assortment (**seasonally**). An approval/Modification of the output document of pre-order follows up. Here the store manager reviews styles per quantities and can accept or modify the pre-order for the store. **The documents to be registered in the blockchain system is the buying proposal, possibly an email exchange.**

User story 59 Product Placement of Product in Stores or On-line for Sale: *As a store manager, I want that the products in store are the right fit and assortment for the market I serve, so that I can serve my customers with the optimal choices.*

10.2

The buying department inserts order of the store into the collection order system (**seasonally**). **The documents to be recorded in the blockchain system are the order confirmation and the related invoice, possibly an email exchange.**

User story 60 Product Placement of Product in Stores or On-line for Sale: *As a buyer manager, I want the order collection to follow deadline and correct allocation worldwide, so that the stores are well assorted.*

10.3

Planning discussion between Store Manager and Logistic Department. The delivery organization may follow the sales frame dictated by law per country on which depends the exhibition of new collection (**weekly during the season**). **The document to register in the blockchain system is possibly an email exchange.**

User story 61 Product Placement of Product in Stores or On-line for Sale: *As a store manager, I want to make sure the goods arrive at appropriate time in store, so that I can display the new collection in time.*

10.4

Arrival of goods at store. The stock manager deals with the reception from courier and accepts the packages. Then, a sorting of products per deliveries and categories follows (**weekly during the season**). After the check of compliance of packing list of the shipment, there is the printing of barcode prices. In the stockroom there is a display of new arrival pieces and the stock manager advises store manager on the arrival. **The document to register in the blockchain system is the packing list per shipment and possibly, the packing list and the document of transportation.**

User story 62 Product Placement of Product in Stores or On-line for Sale: *As a stock room manager, I want to prepare the new collection arrival in an organized way, so that the store manager can schedule the new display of goods with the visual merchandiser.*

10.5

When the right time for new display comes, there is the shoplift of the goods and the extra packaging is removed and recycled (**multiple times during the season, about every two weeks circa and anytime is needed**). The activity is performed by Store Team or Visual Merchandiser. A final check of prices follows and then the products finds its dedicated place in the store

User story 63 Product Placement of Product in Stores or On-line for Sale: *As a visual merchandiser, I want the products to be ready for display in the right area of the store, so that the sale potential is optimized.*

10.6

The Visual Merchandiser approves with the Head of Retail the display and follows the group direction prepared by the headquarter (**multiple times during the season, about every two weeks circa and anytime is needed**). The store is prepared for new display. **Potential documents to register in the system is the guidelines from the headquarter, possibly an email exchange.**

User story 64 Product Placement of Product in Stores or On-line for Sale: *As a visual merchandiser, I want to harmonize the store to the global direction, respecting local necessities, so that the brand identify is kept and enhanced.*

10.7

In order to keep the store looking fresh and curated, a change in the layout is planned constantly. This is to keep the product moving across the store and to offer new looks proposal to clients (**about every two weeks**).

User story 65 Product Placement of Product in Stores or On-line for Sale: *As a store manager, I want to renew my offering in store as much as possible, so that the clients visit multiple times in search for new items.*

10.8

When the product is sold the item exit from the inventory on the system. There is a manual unloading of goods via barcode reader in store (**every time an item is sold**).

User story 66 Product Placement of Product in Stores or On-line for Sale: *As a stock manager, I want to have update stock real time, so that the requests from the store can be fulfilled.*

Eventually the consumer is in possession of the garment/product.

USE CASES

User story 67 Product Placement of Product in Stores or On-line for Sale: *As a retailer, I want to know the water consumption used during all the processes before obtaining the garment, so that I know the water consumption.*

User story 68 Product Placement of Product in Stores or On-line for Sale: *As a retailer, I want to know the impact of the carbon footprint used during all the processes after obtaining the fabric, so that I know the water consumption.*

User story 69 Product Placement of Product in Stores or On-line for Sale: *As a retailer, I want to know the impact of the carbon footprint used during all the processes before obtaining the garment, so that I know the carbon footprint impact on the environment.*

User story 70 Product Placement of Product in Stores or On-line for Sale: *As a retailer, I want to know the impact of the carbon footprint used during all the processes after obtaining the fabric, so that I know the carbon footprint impact on the environment.*

User story 71 Product Placement of Product in Stores or On-line for Sale: *As a retailer, I want to know the impact of the carbon footprint used during the transport carried out to obtain the final garment, so that I know the carbon footprint impact on the environment.*

Chapter 11: Consumption and Disposal (TBC)

This business process is not covered in the pilot's scope

User story 72 Consumption and Disposal: *As a consumer, I want to be able to trace a product and have information about its safety and sustainability by the label MADE IN GREEN by OEKO-TEX® so that, I can be sure that the products have been tested for harmful substances and are produced in a sustainable manner, i.e. in an environmentally friendly and socially responsible manner. MADE IN GREEN by OEKO-TEX® additionally offers the transparency of all textile production processes within a supply chain through an OEKO-TEX® internal traceability system. To that effect, the production facilities or materials used in production must be certified by OEKO-TEX®. The certification for textiles is STANDARD 100 by OEKO-TEX®. The certification for textile production facilities is STeP by OEKO-TEX®.*

Chapter 12: Post-Consumption Recycling (TBC)

This business process is not covered in the pilot's scope

User story 73 Post-Consumption Recycling: *As a sorting/recycling company, I want to know the composition and recyclability information and the certificates (pe. Organic Cotton, REACH, Higgs ...) linked to the product (at sorting point), so that the clothing/footwear can be re-used/recycled to the highest value in full compliance to legal requirements (pe. REACH).*