

# Lieferanten- qualifizierung mit SQILs / Supplier qualification with SQIL's

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# *Agenda*

**A. Starting situation from VW perspective**

**B. SQIL@Work**

**C. Outlook**

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**A. Starting situation from VW perspective**

**B. SQIL@Work**

**C. Outlook**

Die Abbildungen in diesem Foliensatz sind aus den Unterlagen von VW zur Schulung

“Supplier Qualification and Improvement with SQILs  
- Project Monitoring and Reporting”

entnommen und als solche gekennzeichnet

Based on analysis of evaluation data

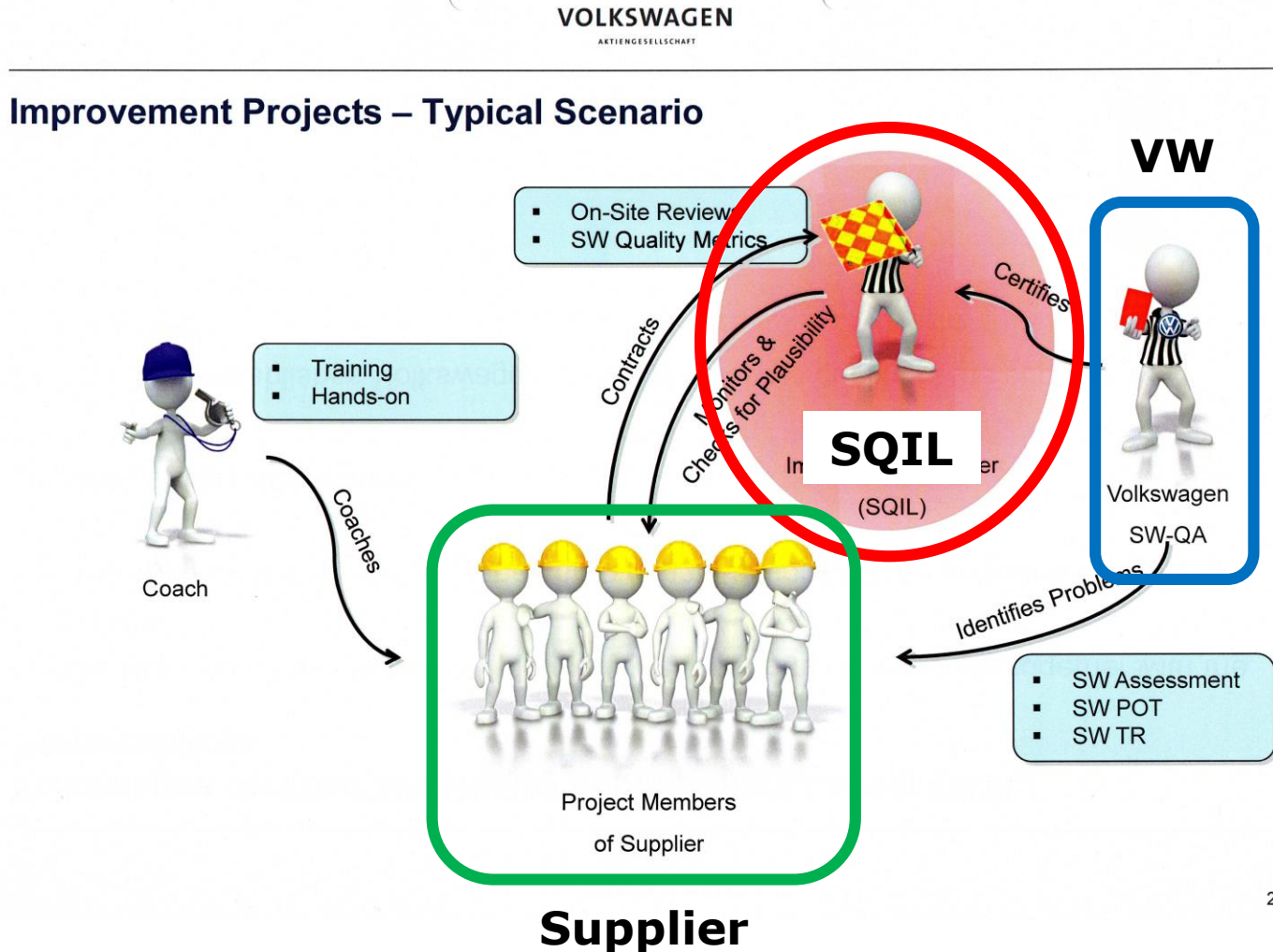
- SW quality is not well established at suppliers
- Majority needs improvement
- Effort for qualification of ONE supplier is high

### **→ Introduction of SQIL scheme**

(“Volkswagen certified SW Quality Improvement Leader”)

# Starting situation from VW perspective

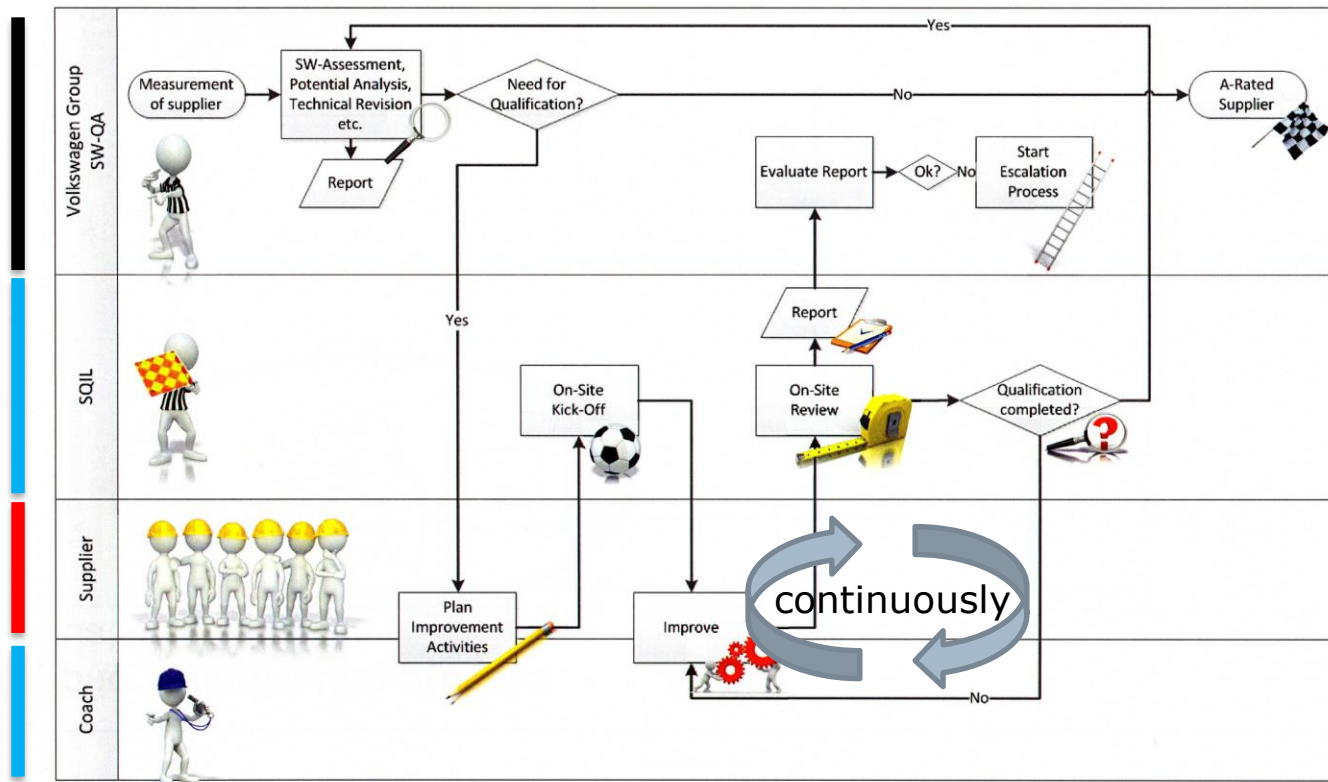
## SQLIL – in between VW and the supplier



# Starting situation from VW perspective Supplier qualification process

VOLKSWAGEN  
AKTIENGESELLSCHAFT

## Supplier qualification process Overview



# Starting situation from VW perspective

## Duties of a SQIL – **On-site Kick Off**

Where?

- At suppliers SW development site

Who?

- SQIL
- Involved parties of the supplier
- VW SW-QA recommended

What?

1. Introduction to achieve a common understanding about roles, collaboration model and reporting
2. Clarification about evaluation report
3. Understanding the suppliers situation
4. Review of suppliers improvement program
5. Schedule on-site reviews





# Starting situation from VW perspective

## Supplier qualification process – **On-site review**



Where?

- On-site at supplier

Who?

- SQIL
- Selected “original project” / “improvement project” members of supplier (depending on focus)

What?

1. Review the improvement actions (planning, resources)
2. Spot check improvements
3. Review quality performance by example (risk evaluation for project, trace example through life cycle)
4. Evaluate given SW quality metrics
5. Evaluate Completeness of Qualification

# *Starting situation from VW perspective*

## **SQL training and exam**

### Training

- VW offers a special five days training for SQL's which is performed by VW quality assurance / assessors
- Precondition
  - Participants should be certified intacs Automotive SPICE assessors of at least Provisional level

### Exam

- Following the SQL training there is an exam

### Registration as SQL

- Passing the SQL exam after the SQL training allows to work as SQL
- VW maintains a list of SQL's which can be asked for by suppliers who need support by a SQL

## A. Starting situation from VW perspective

## B. SQIL@Work

- **Roles and project types**
- **The ceremony**
- **Observations**

## C. Outlook

## A. Starting situation from VW perspective

## B. SQIL@Work

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## C. Outlook

VW → Supplier / SQIL

Relation VW → Supplier

- VW demands that the supplier nominates a SQIL for a project
- VW expects reports about improvement progress and final recommendation or a new assessment

Relation VW → SQIL

- VW assumes that the SQIL works according to VW's concept
- VW expects SQIL reports from SQIL
- VW has no direct authority related to the SQIL
  - But via the boundary conditions of the SQIL scheme there is more or less indirect influence

### Supplier → VW / SQIL

#### Relation Supplier → VW

- Supplier wants to show VW that his process capability is sufficient to get considered as supplier for subsequent projects
- Supplier has to deliver project outcomes of the project under investigation according to the VW's milestones

#### Relation Supplier → SQIL

- Supplier nominates and pays SQIL
- Supplier expects support and help of SQIL to fulfill VW expectations
- SQIL recommends a re-evaluation of the supplier to VW as soon as VW's requirements are met

(remember: re-evaluation could be assessment, potential analysis and technical revision)

### SQL → VW / Supplier

#### Relation SQL → VW

- There is only a “loose coupling”
  - As a precondition the SQL has to attend a specific SQL training with following exam at VW. The SQL has at least the status of a Automotive SPICE Provisional assessor
  - The SQL delivers SQL reports directly to VW (after review with the supplier)
  - The SQL can ask VW for clarifications

#### Relation SQL → Supplier

- The SQL is ordered by the supplier
  - The SQL’s customer is the supplier
  - The SQL has to take into account the supplier’s interests (regarding the process requirements of the SQL schema issued by VW)

1. The **project** (= "**original project**" developing a product)
  - The supplier develops a product for VW
  - This project was evaluated by VW and based on this evaluation the improvement need was determined
2. The "**improvement project**"
  - is performed in parallel to the "original project"
  - handles all identified improvement measures (processes, methods, quality of specific work products)
  - Typically the team members of the "improvement project" are at the same time members of the "original project"
    - → available time needs to be split among "original project" and "improvement project"
3. The "**SQL project**"
  - Start and end date defined in contract between supplier and SQL
  - Scope of work in essence given by number and frequency of SQL meetings to perform plus SQL reports to deliver
  - Team members are the SQL and a coordinator at the supplier's site



- The **action plan** contains entries related to each weakness found during VW's assessment
- This plan is defined by the supplier and at least its initial version is reported to VW
  
- There are no VW requirements for content and structure of such an action plan
  
- But the **tasks of the SQLIL** are clear
  - ➔ SQLIL needs to check for adequacy of
    - derived actions and
    - resource assignment

The following gives an idea about **typical content** for such an action plan

- Each entry of the action includes
  - A reference to the *finding of the assessment*
  - Which *actions* to be performed?
  - Who is *responsible*?
  - A *due date*
  
  - *Status*
    - **Supplier's view**
    - **SQIL's view**
  - *SQIL comment*

## A. Starting situation from VW perspective

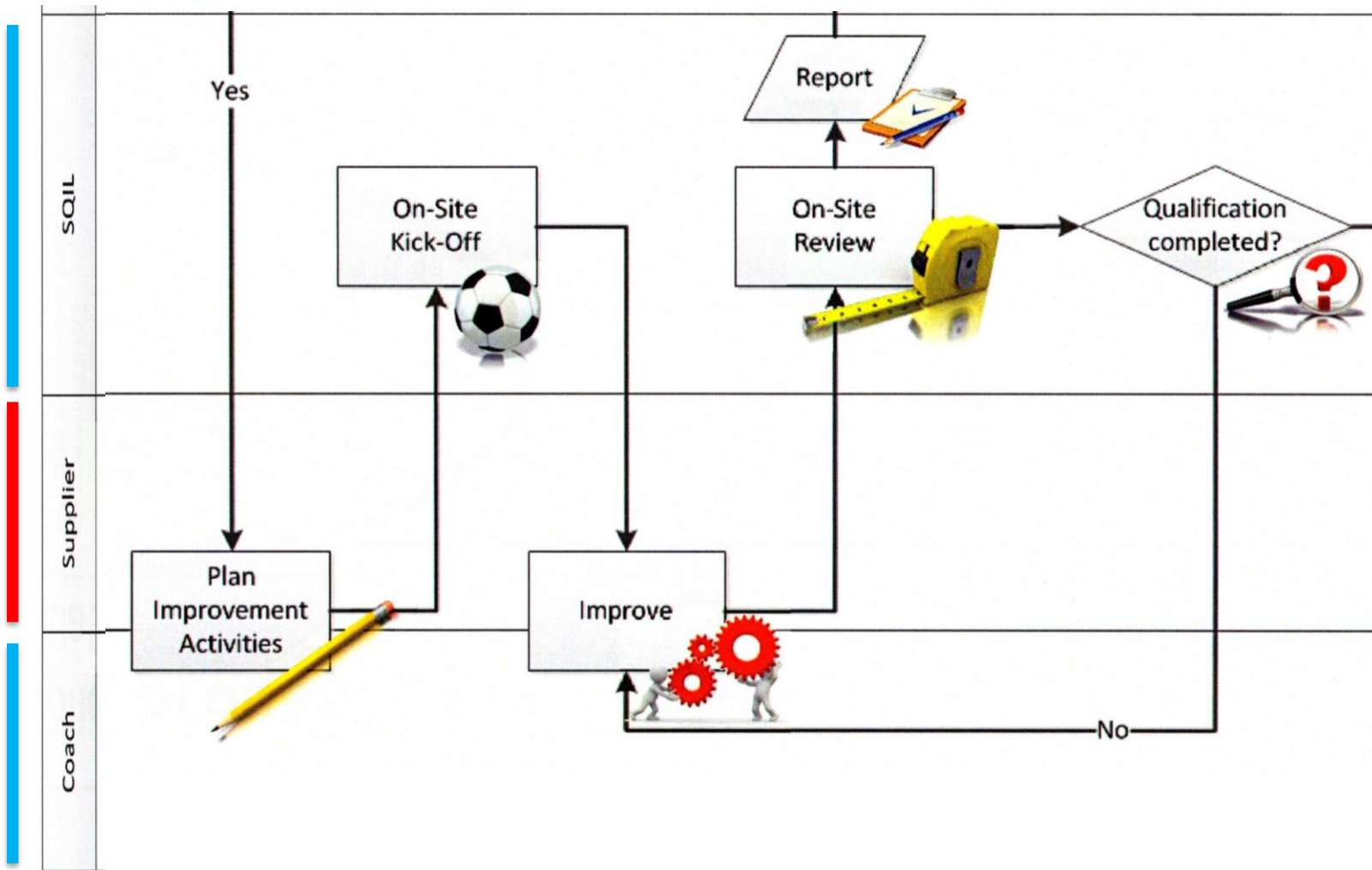
## B. SQIL@Work

- Roles and project types
- **The ceremony**
- Observations

## C. Outlook

# SQL@Work: The ceremony

## Concerning roles SQL and supplier



# SQL@Work: The ceremony

## Before involvement of the SQL

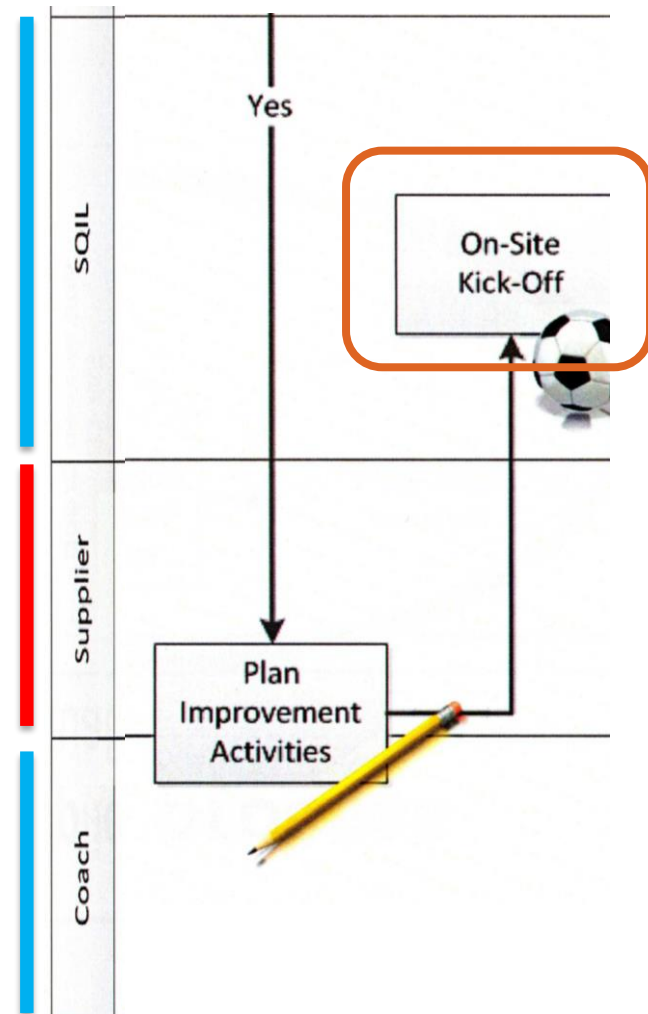
- Supplier prepares **Action list** based on findings of VW assessment (= Plan Improvement Activities)
- **Supplier selects SQL** from the list of registered SQL's
- **Supplier and SQL negotiate** about the future "SQL project" (e.g. budget, dates, deliveries)
- After clarification and agreement supplier commissions SQL
- → On-Site Kick-Off



# SQL@Work: The ceremony

## On-Site Kick-Off

- During On-Site Kick-Off at the supplier's site
  - the project,
  - the project team,
  - challenges
  - ... and so on ...are presented to the SQL
- An **initial planning** of the SQL project is discussed and agreed
  - On-site SQL dates?
  - Who will typically be involved in the SQL on-site meetings?
- A "**local contact person**" is identified who supports the SQL and manages the meetings with the project team members



# SQL@Work: The ceremony

## After Kick-Off: **The SQL project loop**

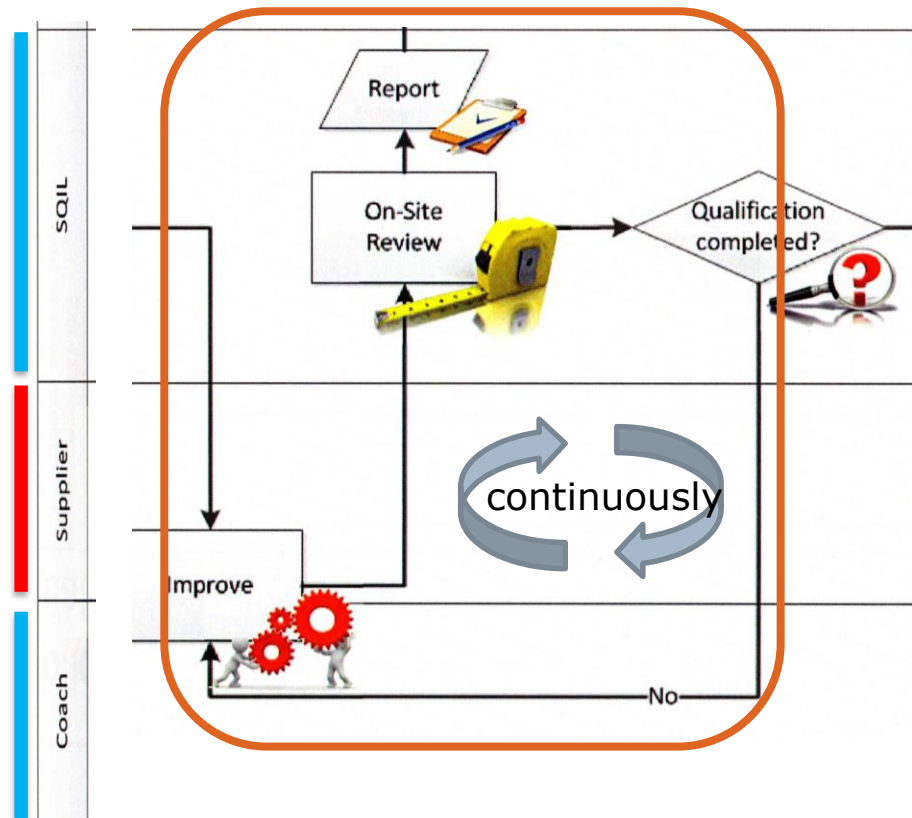
### Supplier internal

- The supplier performs improvements based on the action list

### SQL on-site

- The SQL checks the improvement actions which were performed and finished according supplier's estimation
- The SQL evaluates the improvements and assigns a status for each checked improvement ("SQL status")
- If applicable the SQL defines additional actions

And so on ...



# *SQLIL@Work: The ceremony*

## **Grooming of the Action plan**

- All action plan entries which are finished according to supplier's view and which are not yet in a "SQLIL accepted state" are potential candidates for the SQLIL's check
  
- **Which action points are looked at** depends on
  - a prioritization performed by SQLIL and "local contact person"
  - the availability of project team members who can explain and bring arguments for performed action
  
- **Real life problems**
  - Not much progress on defined actions
  - Relevant project members are not available for the SQLIL on-site meeting
    - "Holiday, illness, etc."
    - Project has higher priority



# *SQLIL@Work: The ceremony* **"Puncture" ("Durchstich")**

- A **VW requirement** is that the **SQLIL should regularly do a "puncture"** of the project's requirements / architecture / test cases
- For a set customer requirements (by VW) one starts always with a customer requirement and follows along the expected traceability
  - "down to"
    - System requirements
    - System architecture
    - Software requirements
    - Software architecture
    - Software detailed design and code
  - as well "to the right"
    - System test cases
    - System integration test cases
    - Software test cases
    - Software integration test cases
    - Unit test cases
- The result shall be included in the SQLIL report

## *SQLIL@Work: The ceremony* **Interaction between SQLIL and supplier**

- General contact is via the “local contact person”
- During SQLIL meetings
  - The SQLIL asks the related project team members about their solution to action points (***assessment***)
  - The SQLIL can support the supplier’s improvement project by giving advice related (***improvement***)
    - To implementation of the actions points
    - But very often as well to explanations of VW’s findings and ways how to improve
- If necessary **SQLIL talks to the supplier’s management** especially in order to push the improvement activities which are sometimes (or even often) delayed due to the “original project’s” demands

# *SQIL@Work: The ceremony*

## **VW's questionnaire**

- VW typically demands that a so-called “questionnaire” is filled out regularly (e.g. fortnightly or monthly)
- This questionnaire is implemented as an Excel sheet and given by VW as a template to the supplier
- The questionnaire's content is in essence an overview about the number of
  - Customer requirements
  - Derived system requirements and system architecture elements
  - Derived software requirements and software architecture elements
  - Software detailed design and code implemented
  - Related test cases and performed tests
- The **numbers give an overview about the engineering and test progress as well as quality status of the project**
- VW will do an evaluation of associated metrics based on the numbers included in each version of the questionnaire
  - Note: The delivery of the questionnaire is a task of the supplier but sometimes this task is delegated to the SQIL
  - **The questionnaire's content is an important input for the SQIL**

VW quality assumes that the SQL sends a report about the progress of the improvement project

- There is **no “official template”** for the report
  - I asked for information about the content and got a mail from one member of the VW quality department leading to the following topics
    - 1 Questionnaire Graphics
      - *to be generated by VW quality*
    - 2 Process Performance
    - 3 Improvement Progress Status
    - 4 Results from SQL Checks
    - 5 Work Product Status
- It seems there are **no requirements about the expected frequency** of the report
  - I wrote a report usually based on two or three SQL on-site meetings at the supplier → a report about every second month
  - There was no demand for more reports

### Expectations to feedback of VW

- At least a confirmation that the report was received
- The graphics based on questionnaire data should have been sent to the SQLIL so that the SQLIL could create an update of the report now including the graphics
- Statements like “content is okay”, “we would like to see more detailed information” or similar

### Real life

- For all but one SQLIL report there was no feedback by VW

### Consequence

- The reports seem to contain the information needed
- ➔ all reports were created in the same way including new or updated information

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There was an invitation at short notice by my customer after the kick-off at the supplier and before the SQLIL project started

- VW quality invited the supplier's representatives of the project to a meeting in Wolfsburg
- The SQLIL was invited to join the meeting and to introduce himself

In one of our SQIL projects the questionnaire was filled out and delivered to VW by the supplier's quality

In another SQIL project the supplier considered this to be the duty of the SQIL

- Compiling and updating the questionnaire is not a core activity of the SQIL
- **But during evaluation of the action points the questionnaire is a most importance source of evidences**
  - It is very important to make sure the questionnaire data are filled out consistently over the project's life cycle!



# *SQL@Work: Observations*

## **Supplier's change of perspective**

Start of "SQIL project"

- The **SQL** is seen as a **representative of VW**
- → the SQIL is associated with "pressure", "stress", "enforced tasks"

During the "SQIL project"

- The SQIL shows competence
- The SQIL shows that he wants to help to improve
- The SQIL gives motivations for tasks of the action list
- The SQIL supports by giving advise how to solve findings

To the end / at the end of the "SQIL project"

- **Members of the improvement team**
  - express gratitude!
  - say that the meetings with the SQIL were **helpful and supporting!**

But sometimes implementation of a SQL at a supplier is done in a different way

→ This can result in creating pitfalls

→ Let's look at some examples!

# SQL@Work: Observations

## Different implementations of SQL scheme

Situation A

Too much!

### **SQL is part of supplier's improvement project**

- The SQL is not only doing the expected evaluation, support in improvement and finally reporting the degree of maturity to get re-evaluated ...
- ... BUT
  - **Gets directly involved as part of the improvement project**
  - Leads or drives improvement activities
  - Works on content of e.g. improvements for guidelines

Problems:

- Independency of SQL is no longer given: SQL starts to judge about himself
- Improvements are not established within the organization but on "SQL's desire": **no sustainability after SQL engagement**

### Situation B

#### **SQL is taken as an necessary evil**

Too little!

- The SQL is **not involved in any activities at the supplier** nor informed about problems/challenges
- The SQL performs **only the minimum of the activities** to check the outcomes

### Problems:

- Supplier is wasting time and money because the ability of SQL to help by bringing in VW's perspective is not used
- SQL's evaluation is based on the single events of evaluating work products and the state of improvement program by numbers and shown evidences
- **Improvements may not meet expectations**
  - either over-engineering with respect to VW rules
  - or not meeting expectations due to misinterpretation

# *Agenda*

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**The SQIL scheme is not limited to be used in the VW setting!**

Supplier internally

- If a supplier sets up a SQIL scheme after an internal assessment, this would have a very positive influence on the associated improvement project!
- The SQIL will implement the roles of a motivator and of an enabler!
- The SQIL would see his responsibility in reaching a state where the (internal) action list is completely processed

## **The challenge is to balance**

### **1. Don't take a SQIL as the enemy** in your project

- The SQIL is not an VW employee and does not represent a prolonged branch of VW quality department
- The SQIL is certified to help suppliers in interpreting quality requirements established by VW in a way that they fit to suppliers processes

### **The challenge is to balance**

#### **2. Respect the independency**

- In his role the SQIL is obliged to evaluate improvements as well as the pure quality of work products with respect to rules and requirements established by VW
- Thus, incorporating the SQIL too much into the project itself may cause
  - blurred SQIL's view onto improvements
  - one-sided design of processes and methods towards VW requirements
  - establishing a real distance between surface (shown to VW) and real life (project reality, your engineers will find a way around 😊)

The SQIL in a project can never serve as a substitute for the organization's own desire to improve



Thank you for your attention

Questions?

Now?

Or later → <mailto:Uwe.Hehn@methodpark.com>