

# **Explanation of FSR-Report**

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# Purpose / target

During the lifecycle of a product sampling reports and documents of product and process are created by the supplier to verify all requirements in the phases **Pre-Sample**, **First Sample** and **Standard/Re-Sample**.

To achieve a uniform first sample report (FSR) only the template has to be used which is explained in this description. The FSR includes always the coversheet and different verification documents which are attached (like measurement reports, material certifications, process suitability and so on).

The FSR was created on basis of VDA Volume 2.

### **Terms and definitions**

Terms and definitions	Explanation				
FSR	First Sample Report				
First sample	First Sample will be produced completely under serial manufacturing terms and conditions and will be verified completely.  First Samples are different to Pre-Samples.				
Pre-Sample	Pre-Samples are products which are not produced on tools and in processe of the series. Pre-Samples are products which are not produced by tools, drawings, processes, terms and conditions of the series.				
Re-Sample Sample of a variant	Samples of a variant means the verification of a change of an existing product. This could be:				
	<ul> <li>dimensions</li> <li>physical characteristics</li> <li>functional characteristics</li> <li>form and shape</li> <li>surfaces</li> <li>color</li> <li>material and structure of material</li> </ul>				
SC-test	SC = significant characteristics  These are marked in drawings by customer (characteristics relevant for function).  These characteristics have to be marked during the development phase.  Verification of these characteristics will be done by SPC-Statistical Process Control.				
SPC	SPC = statistical process control  Tool to control and optimize product and service processes with statistical calculations.				
FMEA	Failure mode and effect analysis				
WEP/WAP	Goods inwards inspection/outgoing goods inspection				
PSO	PSO = Process Sign Off				

# **Scope**

This document should help all suppliers of AIXTRON, which are applied to verify all requirements and document this by FSR.

For AIXTRON internal use this document should help to create the formally FSR template.



# Responsibilities

The engineering departments of AIXTRON are responsible for technical requirements and specifications.

The logistic department of AIXTRON is responsible for all requirements and specifications of packaging, labeling, conservation and charge carrier.

The quality department of AIXTRON is responsible for the transfer of FSR, control plan and monitoring and analyze test results. They decide further usage.

The purchasing department of AIXTRON is responsible to notice required FSR in request of quotation, scheduling delivery and ordering.

The supplier is responsible to perform the agreed verifications and their documentation. He has to send the documents to AIXTRON quality department before delivery and ask for delivery release.

# **Content / Description**

## 1. FSR General

FSR comprise cover sheet, the protocol of sampling, the table of contents and the attachments of documentation and test results.

# 0 - 31 register



The supplier gets the FSR with base data filled in by the AIXTRON quality department. All yellow marked fields have to be infilled by the supplier. The rosy marked fields will be infilled by AIXTRON.

	Participants of planning meeting:										
Phone:	E-Mail	Department/Function: Name:									
	Supplier	AIXTRON									

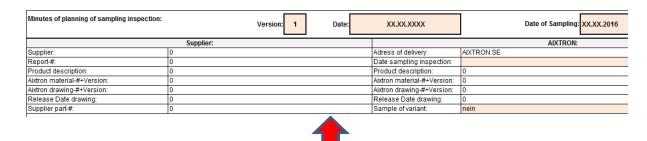


# 2. Protocol of planning sampling (FSR-Planning)

Depending on complexity and range of sampling the planning will be discussed and agreed with supplier.

In the case of parts with low complexity or low range of sampling the protocol will be send directly to the supplier by the quality department of AIXTRON.

The supplier agrees his willingness and the feasibility of sampling by signing the FSR.



# Basic data will be filled by AIXTRON.

Participants of planning meeting:										
Department/Function:	Name:	Phone:	Department/Function:	Name:	Phone:	E-Mail				

Important! Responsibility of both parties have to be defined before sampling.

Report of Releas	e of Process and Product		
Report other Sai	mples		
✓	Sampling	Subsequent sample inspection	
	New Part	Longer stoppage of production >12 n	nonths
	Change of product	Change of supply chain	
	Change of production process		

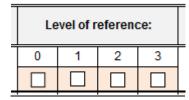
AIXTRON defines type of report of sampling.

Supplier confirmation:							
The shown samples and their features are manufactured with serial manufacturing equipment in serial environment and at serial manufacturing product or process, we will communcate it befeore to Aixtron.							
Name:		Note:					
Department/Function:							
Phone:							
E-Mail:							
Date:		Signature:					

The supplier confirms feasibility and realization of sampling by signing.

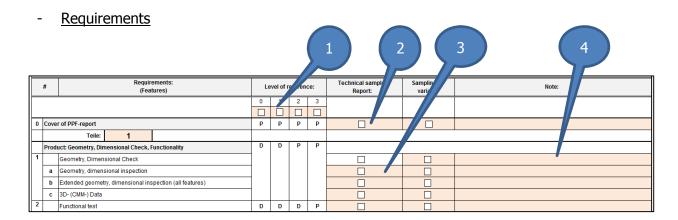


#### - Level of reference



The level of reference defines the necessary verifications, documentation and submission requirements of sampling. The cover sheet has to be sent to AIXTRON always!

D	Realization, documentation and achieving of verification results on supplier side. (in case of need AIXTRON can call for)
P	Realization, documentation of verification results sent to AIXTRON. Achieving on supplier side.



- 1) Choose level of reference
- 2) Choose type of sampling
- 3) Define attributes
- 4) If necessary add notes

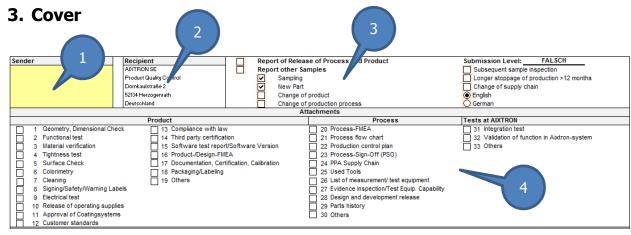
### Tests at AIXTRON

Te	Tests at AIXTRON								
# R		Requirements (Features):	# of samples	Duration in days	Technical sample	Sampling of variant:	Person of contact at AIXTRON		
31		Integration test							
32		Validation of function in Aixtron-system							
33		Others							

Not all test can be done on supplier side. It can be necessary that some tests have to be done inside an AIXTRON-system under laboratory conditions or maybe at customer of AIXTRON to qualify and release a product finally.

Such a release can be done later, independent of date of delivery.



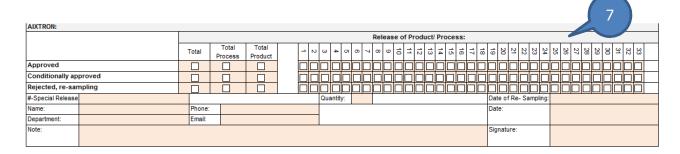


- Sender: Completely address of supplier
- 2) Recipient: Completely address of AIXTRON
- 3) Cause of sampling:
  - Information
  - Level of reference 0-3, mostly level 2 will be used
- 4) Attachments:

Content of sampling (attached documents and documents to inspect)

Supplier:					Bill of delivery-#:			Customer:	AIXTRON SE
Product description: De				Delivery quantity:			Report-#:		
Aixtron material-#+	·Version:				Charge-/Serial-#:			Goods issue-#/ -date:	
Aixtron drawing-#-	+Version:				Weight of sample	[kg]:		Order Call-off No./Date:	
Release Date draw	/ing:			-	Supplier part-#:			Delivery adress:	
Supplier Confirm	nation - It is h	ereby confirme	d that the s	5	een carried out a	ccording	g to AIXTRON's Guideline for Initial samp	oling.	
Name:			Phone:					Date:	
Department:			Email:						
Note: Signature: 6								6	

- 5) Supplier/ Customer data:
  - Fill out the fields completely
  - Product description, AIXTRON-material number (SAP), AIXTRON-drawing number, quantity, and so on.
- 6) Confirmation supplier:
  - All data of responsible persons
  - Cause of sampling as "Note" (for example first sample), other notes
  - If documents or verifications are missing explain why on cover sheet



7) Customer decision (will be infilled completely by AIXTRON)



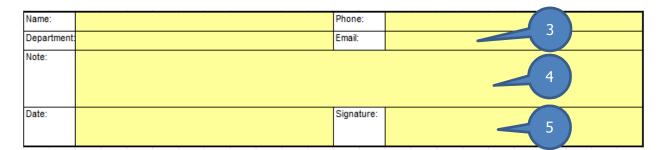
# 4. Attachments

	,,,	Attacology. Your future.	chments	SAP-Document-
Supp	lier:		AIXTRON:	
Suppl		crintion: 0	Adress of delivery	•
		cription: 0	Date sampling insp Product description	-
		wing-#+Vers 0 2	Aixtron material-#	
Relea	se Dat	e drawing: 0	Aixtron drawing-#	
			Release Date drav	wing: 0
		Attachment	Version/ Date	Type, Scope and marking of attachment
0	>	Cover of PPF-report		
1		Geometry, Dimensional Check		
1a		Geometry, dimensional inspection		
1b		Extended geometry, dimensional inspection (all features)		
1c		3D- (CMM-) Data		
2		Functional test		
3		Material verification		
3a		Fire Ratings resp. Flame Class acc. to UL 94 / FM4910		
3b		Material test		
3с		Material data sheet ISO 10204 3.1		
3d		Material data sheet ISO 10204 2.2		
3e		Metallographie		
3f		Conflictminerals-declaration of conformity		
3g		RoHS-declaration of conformity		
4		Tightness test		
5		Surface Check		

## General:

Sent protocol has to have a clearly list of attachments.

- 1) Header (information will be copied automatically from cover sheet)
- 2) Attachments:
  - Mark with a cross
  - Infill Revision / Date
  - Type, range and labeling of attachment



- 3) All data of responsible person
- 4) Notes (for example completeness)
- 5) Date and signature



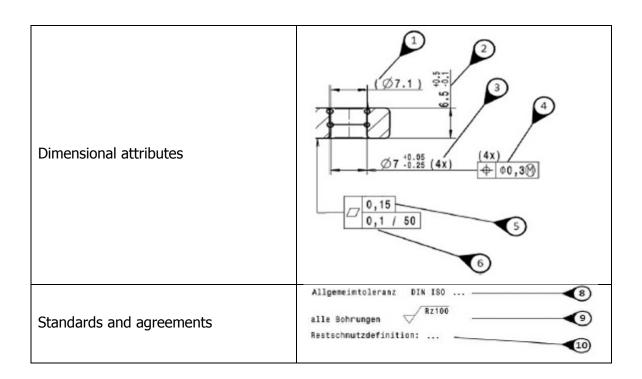
# 5. Product test results

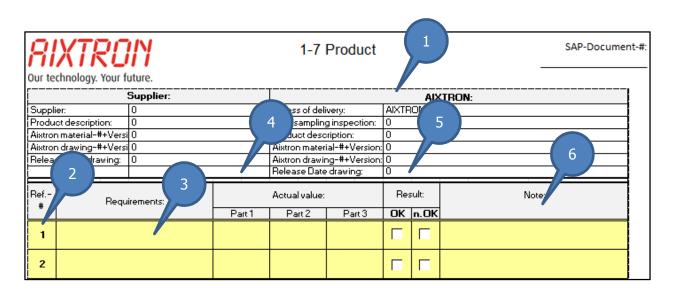
	XTRO chnology. Your fu				1-7 P	roduct			SAP-Document-#
Supplier:  Supplier:  Dendad densipline:  Ristens adexist-Version:  Ristens densing-Version:  Release Date densing:  Release Date densing:			Date compling improfilm:  Product description:  Rinters material D-Version:  Rinters description:		AIXTR		TROU:		
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					Rejeule	d, econompling			
					Hale:				
Hame:					Hame:				
Departs	rel/feedies:				Departs	rel/feedies:			
Phone:					Phone:				
E-Hail:					E-Hail:				
Dale:					Dale:				
Signation	·•:				Siquale	···:			

#### General:

- Template for measurement and test results
- If AIXTRON agrees supplier can use own template
- Number of measurement results which have to be documented is part of planning between AIXTRON quality department and the supplier
- If 100%-measurement is agreed the supplier has to create drawing with stamps and identifying numbers of dimension (for example see following sketch)







- 1) Header (information will be copied automatically from cover sheet)
- 2) Reference number of attribute
- 3) Requirements (s. attachment)
- 4) Actual value with two decimal places
- 5) Result OK / n. OK
- 6) Notes (for example used measurement equipment). If deviation please note reason why the deviation happened.



7			8				
	Supplier:		AIXTRON:				
Note:		Release of Product/ Pr	rocess:				
		Approved					
		Conditionally approved	i 🗆				
		Rejected, re-sampling					
		Note:					
Name:		Name:					
Department/Function:		Department/Function:					
Phone:	Phone:						
E-Mail:		E-Mail:					
Date:		Date:					
Signature:		Signature:					

# 7) Confirmation supplier:

- All data of responsible person
- Date and signature

# 8) Confirmation AIXTRON:

- Decision (approved, conditionally approved, rejected, re-sampling). If "conditionally approved" or "rejected" please comment.
- All data of responsible person
- Date and signature

RIYTRAN



SAP-Document-#:

# 6. Product related E-Testing

	Supplior:			AIXTRON:					
Supplior: 0		Adress of delivery: AIXTRONSE							
Product description: 0			Product description: 0						
Aixtron material-\$+Very 0 Aixtron drawina-\$+Very 0		$\overline{}$	Aixtron material-\$+Version: 0						
Aixtran drauing-\$+Vorr   0 Roloaro Dato drauing:   0		$\overline{}$		q-\$+Vorzion:	0				
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*	Requires			Result: OK s.OK			Hato:		
**	Tireal la	rpaction							
	Type of Rac	k and Framo							
	Lacking Sys	rtom							
	Cable gland	ls and foodthroughs							
	Dozignation	labol (fixing)							
	Labelingaf	devices							
	Cable calou	rz main power circuitz		П					
	Cable calau	er control circuits		H					
	+	blos, PE and N-color, routing	Ti	H					
	_	liko drawing/bill of matorial	1 7	H					
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	Interlacking	•		H					
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Cable Fixing  Electrical Connections/devices and burbars									
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	<del></del>	oors with equipped fures							
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	Insulation Restirtance DIN EN 60204-1								
	Grounding (	Continuity Tast DINEN 60204-1/SEMI S22-0712							
	Dioloctric	Vithstand Tast DIN EN 60204-1/SEMI S22-0712							
	Tomporatu	ro Riro Tort SEMI S22-0712							
	Input Curro	nt Tart SEMI S22-0712							
	Sound Prozzuro Lovol Tost SEMI S22-0712								
94	Function	test with reted valtage							
	Circuit/Con	strak		П					
	ControlUni	v	T T	ī					
•	_	recastinar							
	_	against direct contact acc. BGVA3		П					
	_	rrent device circuit (RCD)	H	H					
	_	Compliance with actions to reach required IP Code		<u> </u>					
Supplie late:	r:		Balage	AIZTROM:					
-101				Rologro of Product/ Process:  Approved Conditionally approved Rejected, re-sampling					
				_	_	approved			
			<u> </u>						
			Nato:						
lamo:			Name:						
	nt/Function:				unction				
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-Mail:			E-Mail						
Dato:			Date:						

9 E-Test

## General:

- Template to document measurement and test results of electrical products
- Number of attributes, which have to be documented will be defined during planning
- Results will be detected attributive
- Values have to be infilled as note
- Attach reports or similar to the FSR and note



# 7. Operating supplies

	KTRON	rating supplies —					SAP-Document-#	
our tech	nology. Your future.	AIZTROM:						
Supplier:				delivery:		AIXTRON		
Product description:				description:		HINTRO	136	
Aixtran material-\$+Versian:			_	aeseripti <b>a</b> n: natorial- <b>\$</b> +		_		
Aixtran material **Yerzian: Aixtran drauing **Yerzian: Roloaro Dato drauing:						_		
				Irauina-#+\		_		
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1			-				_	
2			+				_	
3		+	-				_	
5			+					
•			+					
7								
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11			-				_	
12			-				_	
13			+				_	
14		+	+-				_	
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22			-				_	
23			-				_	
24		+	+				_	
26			+					
27			_					
2#								
29								
	Supplier:	-				AIZTE	ROM:	
Nate:			Releare	of Product/	Pracezz:			
			Арр	raved	Condi	tionally ap	proved	Rojected,ro-zampling
		Note:						
Namo:			Name:					
Dopartm.	ont/Funct	t		Dopartmont/Function:				
Phone:			Phone:	hano:				
E-Mail:			E-Mail:					
Dato:			Date:					
Signature:		Siqnatur	Signaturo:					

# General:

- This template is to use to document all operating supplies if required by planning
- Operating supplies are cleanser, adhesives, grease and oil, cooling medium, gases etc.



# 8. Customer Standards

	KTROI		12	Custo	mer S	tandaı	rds	SAP-Document-#:		
Our tech	nology. Your fut	ure.								
Supplier:					AIXTRON:					
Supplier:					Adress of delivery: AIXTRON SE			AIXTRON SE		
Product description:				Product description:						
Aixtron material-#+Version:				Aixtron ma	n material-#+Version:					
Aixtron drawing-#+Version:					awing-#+Ve	ersion:				
Release Date drawing:					Release I	elease Date drawing:				
#	# Customer Standard		Revi- sion	Date of Release		OK?		Note		
1										
2										
3										
4										
5										

### General:

- Document all AIXTRON- company standards which have been used for planning and production
- The status of revision and the date of release of the company standards have to be documented

# 9. 20-30 Production process

	TRU ology. You		20-30 Pr	oce	ss	SAP-Document-			
	3,	Supplier:		AIXTRON:					
Supplier: A			Adress	of delivery:	AIXTRON SE				
Product description:		Produc	et description:						
Aixtron material-#+Vers		Aixtron	material-#+Version:						
Aixtron drawing-#+Vers		Aixtron	drawing-#+Version:						
Release Date drawing:		Releas	e Date drawing:						
•	Requiren	nents:		Note:					
20	Process	-FMEA							
21	Process	flow chart							
22	Production control plan								
23	Process-Sign-Off (PSO)								
24	PPA Sup	ply Chain							
25	Used Too	ols							

## General:

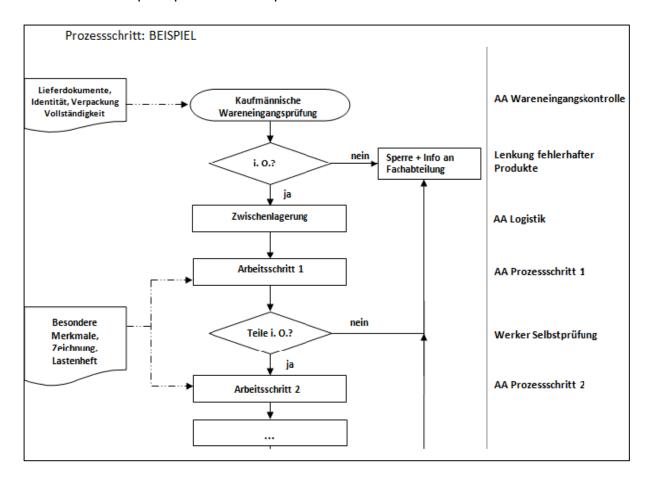
- All processes which have been agreed during planning have to be documented in this template



- 20) Process-FMEA (Failure modes and effect analysis)
  - A process-FMEA can only be confirmed by this document and the sent cover of FSR
  - Inspection of the FMEA can be done during an audit

#### 21) Flowchart of Process

- All steps of process and inspection have to be shown in the flowchart



#### 22) Production Control Plan

- Process steps analogical to flowchart
- Special attributes must be marked
- Includes all steps of control (Incoming goods, outgoing goods, SC-inspection etc.)
- If SC-attributes are set and required Statistical Process Control must be done

# 23) Process Sign Off (PSO)

- AIXTRON will initialize PSO only for special products
- Goal of PSO is to assure that the production process of a supplier is capable to produce AIXTRON products
- It should ensure that AIXTRON requirements are understood and reproducible complied



- 24) FSR-Supply chain
  - Name all subcontractors and sub supplier which are involved to manufacture the product
  - Attach all documents of sampling of sub suppliers
- 25) Used tools
  - Will not be required often
  - If necessary AIXTRON will discuss the design of the overview with supplier
- 26) List of measurement/test equipment
  - Name all measurement/test equipment
- 27) Evidence inspection/test equipment-capability
  - Evidence inspection/test equipment must be done for example with pressure test equipment or product related inspection tools
  - It is possible that the last calibration report/certificate of standard inspection/test equipment like caliber, caliber etc. will be required
- 28) Design and development release
  - Design and development release will be requested by SOW (Statement of Work)
  - In the SOW will also be regulated who is responsible for the release at AIXTRON
- 29) Part history Part history shows the completely process/product development and all changes at these

Example:

# Our technology, Your future.

#### 31 Part History

SAP-Document-#:

	AIXTRON:						
Supplier:			Adress of delivery: AIXTRON SE				
Report-#:			Date sampling inspection:				
Product description:			Product description:				
Aixtron material-#+Version:			Aixtron material-#+Version:				
Aixtron drawing-#+Version:			Aixtron drawing-#+Version:				
Release Date drawing:			Release Date drawing:				
			Sample of variant:	nein			
#	Date	Discription of action	Order-#	Bill of delivery- #	Note		
1	XX.XX.XXXX	Zeichnungserstellung und Freigabe					

- 30) Other
  - Special agreements with are not standard part of FSR

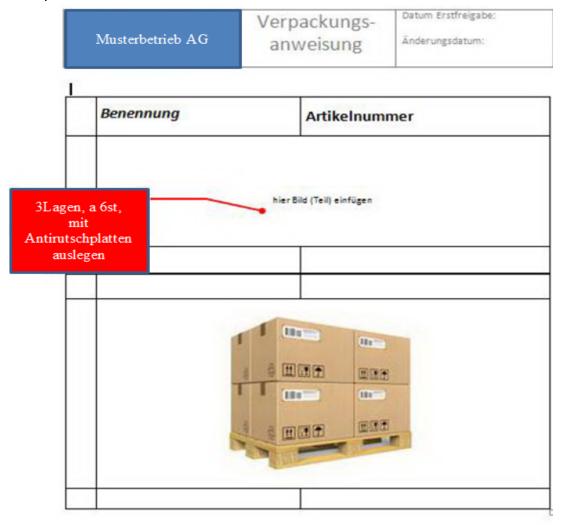


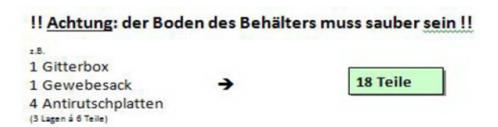
# 10. Charge carrier/Packaging/Identification marking

## General:

If charge carrier is marked in the FSR and there are no further requirements agreed the supplier have to bring by a verification of suitability (for example a working instruction of packaging)

## Example:







## **Notes**

## <u>Trust</u>

Most results of sampling will be reviewed by the sent report and contained test results. Basic principle is an especially partnership of trust between AIXTRON and the supplier.

## **Documentation**

#### The FSR

- has to be sent to Aixtron before delivery of product
- will be shared by saving on External Data Exchange-server
- please consider TCF0013.

# Responsible of FSR at AIXTRON

Help, questions and notes can be sent to Quality@aixtron.com.

## **Attachments**

- TCF0013