

This is a preview of "ISO 16355-1:2021". [Click here to purchase the full version from the ANSI store.](#)

Second edition  
2021-05

---

---

# Application of statistical and related methods to new technology and product development process —

Part 1:

## General principles and perspectives of quality function deployment (QFD)

*Application des méthodes statistiques et des méthodes liées aux nouvelles technologies et de développement de produit —*

*Partie 1: Principes généraux et perspectives de déploiement de la fonction qualité (QFD)*



Reference number  
ISO 16355-1:2021(E)

© ISO 2021

This is a preview of "ISO 16355-1:2021". Click [here](#) to purchase the full version from the ANSI store.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 16355-1:2021". Click here to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>vi</b>
<b>Introduction</b> .....	<b>vii</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Basic concepts of QFD</b> .....	<b>3</b>
4.1 Theory and principles of QFD.....	3
4.2 QFD use of the word of function.....	3
4.3 Spirit of QFD.....	3
4.4 Display of information.....	4
<b>5 Integration of QFD and product development methods</b> .....	<b>4</b>
5.1 QFD support for product development methods.....	4
5.2 Flow of product development with QFD.....	4
5.2.1 Organization of the QFD flow.....	4
5.2.2 Flow chart of product development with QFD.....	5
<b>6 Types of QFD projects</b> .....	<b>5</b>
6.1 General.....	5
6.2 Applicable methods and tools.....	6
<b>7 QFD team membership</b> .....	<b>6</b>
7.1 QFD uses cross-functional teams.....	6
7.2 Core team membership.....	6
7.3 Subject matter experts.....	6
7.4 QFD team leadership.....	7
<b>8 QFD voices</b> .....	<b>7</b>
8.1 Voice of business.....	7
8.2 Voice of customer (VOC) or voice of stakeholder (VOS).....	8
8.2.1 Definition of customer or stakeholder.....	8
8.2.2 Applicable methods and tools.....	8
8.2.3 Marketing perspective and engineering perspective.....	8
8.2.4 Applicable methods and tools.....	8
8.2.5 Prioritize customers or stakeholders.....	9
8.2.6 Applicable methods and tools.....	9
8.2.7 What is contained in the voice of customer (VOC) or voice of stakeholder (VOS).....	9
8.2.8 Sources of VOC and VOS.....	9
8.2.9 Applicable methods and tools.....	9
8.2.10 Translating VOC/VOS into customer needs.....	10
8.2.11 Applicable methods and tools.....	10
<b>9 Structuring information sets</b> .....	<b>10</b>
9.1 General.....	10
9.2 Applicable tools and methods.....	10
<b>10 Prioritization</b> .....	<b>11</b>
10.1 General.....	11
10.2 Applicable tools and methods.....	11
<b>11 Quantification</b> .....	<b>11</b>
11.1 General.....	11
11.2 Applicable tools and methods.....	11
<b>12 Translation of one information set into another</b> .....	<b>12</b>
12.1 General.....	12
12.2 Applicable tools and methods.....	12

This is a preview of "ISO 16355-1:2021". [Click here to purchase the full version from the ANSI store.](#)

<b>13</b>	<b>Transfer of prioritization and quantification from one information set into another</b>	<b>12</b>
13.1	Transfer of prioritization	12
13.2	Applicable tools and methods	13
13.3	Transfer of quantification	13
13.4	Applicable tools and methods	13
13.5	Transferring deployment sets by dimensions	14
13.5.1	General	14
13.5.2	Quality deployment	14
13.5.3	Applicable tools and methods	14
13.5.4	Technology deployment	14
13.5.5	Applicable tools and methods	15
13.5.6	Cost deployment	15
13.5.7	Applicable tools and methods	15
13.5.8	Reliability deployment	15
13.5.9	Applicable tools and methods	15
13.5.10	Safety deployment	16
13.5.11	Security deployment (see ISO 16355-7)	16
13.5.12	Lifestyle and emotional quality deployment	16
13.5.13	Applicable tools and methods	16
13.6	Transferring deployment sets by levels	16
13.6.1	Function deployment	16
13.6.2	Applicable tools and methods	17
13.6.3	Parts deployment	17
13.6.4	Applicable tools and methods	17
13.6.5	Manufacturing and process deployments	17
13.6.6	Applicable tools and methods	17
13.6.7	Project work or task management	17
<b>14</b>	<b>Solution concept engineering</b>	<b>18</b>
14.1	General	18
14.2	Applicable tools and methods	18
<b>15</b>	<b>Design optimization</b>	<b>18</b>
15.1	Parameter design for robustness	18
15.2	Tolerance design	18
15.3	Applicable tools and methods	18
<b>16</b>	<b>Prototyping, testing, and validation</b>	<b>19</b>
16.1	General	19
16.2	Applicable tools and methods	19
<b>17</b>	<b>Build planning</b>	<b>19</b>
17.1	General	19
17.2	Applicable tools and methods	19
<b>18</b>	<b>Build start-up</b>	<b>20</b>
18.1	General	20
18.2	Applicable tools and methods	20
<b>19</b>	<b>Build</b>	<b>20</b>
19.1	General	20
19.2	Applicable tools and methods	20
<b>20</b>	<b>Packaging design, logistics, channel management, consumer information, and operating instructions</b>	<b>21</b>
20.1	General	21
20.2	Applicable tools and methods	21
20.3	Logistics	21
20.4	Marketing claims	21
<b>21</b>	<b>Customer support</b>	<b>21</b>
21.1	General	21

This is a preview of "ISO 16355-1:2021". [Click here to purchase the full version from the ANSI store.](#)

21.2	Applicable tools and methods.....	21
<b>22</b>	<b>Customer satisfaction.....</b>	<b>21</b>
22.1	General.....	21
22.2	Applicable tools and methods.....	22
<b>23</b>	<b>Product end-of-life disposal, recycle, reuse, and other sustainability concerns.....</b>	<b>22</b>
23.1	General.....	22
23.2	Applicable tools and methods.....	22
<b>24</b>	<b>Flow to next generation development.....</b>	<b>22</b>
24.1	General.....	22
24.2	Applicable tools and methods.....	22
<b>Annex A (informative) Examples of applicable methods and tools.....</b>		<b>23</b>
<b>Annex B (informative) Concept relationships and their graphical representation.....</b>		<b>53</b>
<b>Bibliography.....</b>		<b>54</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 8, *Application of statistical and related methodology for new technology and product development*.

This second edition cancels and replaces the first edition (ISO 16355-1:2015), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- throughout the text, addition of relevant informative references to the other parts in the ISO 16355 series, which are also added to the Bibliography.

A list of all parts in the ISO 16355 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This is a preview of "ISO 16355-1:2021". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

Quality function deployment (QFD) is a method to assure customer or stakeholder satisfaction and value with new and existing products by designing in, from different levels and different perspectives, the requirements that are most important to the customer or stakeholder. These requirements are well understood through the use of quantitative and non-quantitative tools and methods to improve confidence of the design and development phases that they are working on the right things. In addition to satisfaction with the product, QFD improves the process by which new products are developed.

Reported results of using QFD include improved customer satisfaction with products at time of launch, improved cross-functional communication, systematic and traceable design decisions, efficient use of resources, reduced rework, reduced time-to-market, lower life cycle cost, improved reputation of the organization among its customers or stakeholders.

This document demonstrates the dynamic nature of a customer-driven approach. Since its inception in 1966, QFD has broadened and deepened its methods and tools to respond to the changing business conditions of QFD users, their management, their customers, and their products. Those who have used older QFD models will find these improvements make QFD easier and faster to use. The methods and tools shown and described represent decades of improvements to QFD; the list is neither exhaustive nor exclusive. Users should consider the applicable methods and tools as suggestions, not requirements.

This document is descriptive and discusses current best practice; it is not prescriptive by requiring specific tools and methods.