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Vorbeglaubigung

(gem. § 1 Abs. 1 Nr. 3 der Thüringer ApostillenzuständigkeitsVO
vom 30.09.1992, GVBl. 1992, S. 501)

Die Übereinstimmung dieser Ablichtungen
mit dem/n vorliegenden Original/en wird beglaubigt.

Schmalkalden, 09. Feb. 2015

Im Auftrag:



Becker



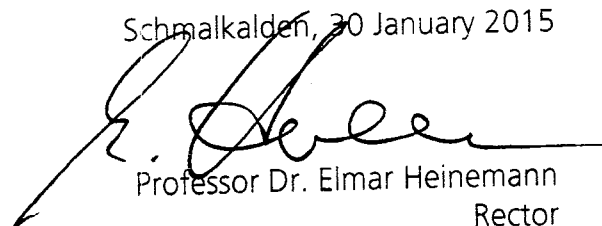
Bachelor of Science

Fachhochschule Schmalkalden
University of Applied Sciences
awards to **Alexander Jahn**,
born on 18 September 1988 in Heide,
after successful completion of all requirements
for the course of study in **Information Technology**,
the degree of

Bachelor of Science (B.Sc.)

Alexander Jahn is entitled to practise as an **Engineer**
in accordance with the current German regulations
controlling the profession.

Schmalkalden, 30 January 2015



Professor Dr. Elmar Heinemann
Rector



Bachelor Degree Transcript

Alexander Jahn,
born on 18 September 1988 in Heide,
has successfully completed the degree of Bachelor in
Information Technology (210 credits)

INTERNSHIP

TITLE

Vorbereitungen für eine analoge Signalaufbereitung zur
Druckmessung in Spritzgießwerkzeugen

grade (credits)

T (16)

BACHELOR THESIS

THESIS TITLE

Konzeption, Umsetzung und Test einer analogen
Signalaufbereitungsschaltung für piezoelektrische
Drucksensoren

very good 1,0 (10)

ORAL EXAMINATION

very good 1,0 (4)

OVERALL GRADE

very good 1,5 (210)

Grades:
very good (to 1,5), good (1,6 to 2,5), satisfactory (2,6 to 3,5), sufficient (3,6 to 4,0)
T successful participated

(a) accepted result by an other course of study or university

* additional module: not included in the overall Grade

** in English

(credits) = ECTS points; required points = 210

MODULES

COMPULSORY MODULES

Mathematics
Fundamentals of Physical and Instrumental Engineering
Fundamentals of Electrical Engineering
Electronics
Electrical Measuring Techniques
Computer Science
English
Business Administration
Microprocessor Technology
Applied Computer Science
Electronic Systems Design and Introduction to Communication
Technology
Signal and System Theory
Electronic Components
Optical Communications / Fundamentals of High Frequency
Engineering
Introduction to Digital Signal Processing
Project

grade		(credits)
very good	1,4	(18)
very good	1,5	(14)
very good	1,4	(18)
good	1,9	(12)
good	2,0	(9)
very good	1,0	(9)
good	2,3	(2)
satisfactory	2,7	(5)
very good	1,0	(4)
good	1,7	(4)
good	2,0	(5)
sufficient	3,7	(5)
satisfactory	3,3	(5)
satisfactory	3,3	(5)
good	1,7	(5)
very good	1,0	(5)

ELECTIVE MODULES

Microwave Engineering
Microcontroller
Digital Communications
Electronics Packaging
Electromagnetic Compatibility
Fundamentals of Microelectronics

very good	1,0	(4)
very good	1,0	(4)
very good	1,4	(9)
good	2,0	(4)
satisfactory	3,0	(5)
satisfactory	3,0	(4)

GENERAL ELECTIVE MODULES

Conflict Management
Communication Networks **
Numerical Mathematics
Business English and English for Negotiations
Electromagnetic Waves *
Self Organisation

very good	1,0	(2,5)
very good	1,0	(5)
very good	1,0	(5)
very good	1,3	(5)
good	1,7	(5)
good	2,0	(2,5)

Dean
of the Faculty of Electrical Engineering

Head
of the Examination Board

Schmalkalden,
30 January 2015



Diploma Supplement

The Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. HOLDER OF THE QUALIFICATION

1.1 Family Name / 1.2 First Name

Jahn, Alexander

1.3 Date, Place of Birth, Country of Birth

18 September 1988, Heide, Germany

1.4 Student ID Number or Code

301406

2. QUALIFICATION

2.1 Name of Qualification (full, abbreviated; in original language)

Bachelor of Science - (B.Sc.)

Title Conferred (full, abbreviated; in original language)

n. a. - n. a.

2.2 Main Field(s) of Study

Information Technology

2.3 Institution Awarding the Qualification (in original language)

Fachhochschule Schmalkalden
Fakultät Elektrotechnik

Status (Type / Control)

University of Applied Sciences / State Institution

2.4 Institution Administering Studies (in original language)

[same]

Status (Type / Control)

[same]

2.5 Language(s) of Instruction/Examination

German

Certification Date: 04 February 2015



Professor Dr. Reinhard Grünler

LEVEL OF THE QUALIFICATION

3.1 Level

First degree, single subject with thesis; 3.5 years integrated two-tier programme

3.2 Official Length of Programme

3.5 years

3.3 Access Requirements

see 8.7

4. CONTENTS AND RESULTS GAINED

4.1 Mode of Study

Full-time, 3.5 years integrated two-tier programme

4.2 Programme Requirements/Qualification Profile of the Graduate

The study is designed to develop at the same time Electrical Engineering and Information Technology core skills, further to accommodate them with advanced knowledge and the ability for practical use in one of the two areas: Microelectronics and Telecommunications engineering.

This is achieved by having a common course content for the first 3 semesters, where students are taught core skills to provide the correct methodology and solutions for a given engineering task. These basic studies include electrical engineering, mathematics, physics, measurement technology, computer science, analogue and digital electronics, electronic devices and materials, and business administration. The courses in the remaining semesters provide deeper knowledge and advanced skills in one of the two areas of specialisation.

A 12 week period of practical training in semester 7, constitutes a required element of the degree course and provides the students with an insight into the industrial sector. The students are actively involved in research projects of the department or in industry during their project work in semester 6. Here they are also taught communication and presentation skills as also to work in a project team. The bachelor thesis is usually accomplished with 8 weeks based on industry.

4.3 Programme Details

See "Bachelorzeugnis" (Final Examination Certificate) for subjects offered in written and oral examinations and topic of thesis, including evaluations.

4.4 Grading Scheme

General grading scheme cf. Sec. 8.6

4.5 Overall Classification (in original language)

sehr gut

Based on examinations "(80%) and thesis (written 15%, oral 5%)", cf.

Bachelorzeugnis (Final Examination Certificate)

FUNCTION OF THE QUALIFICATION

5.1 Access to Further Study

Qualifies to apply for admission for additional studies, e.g. Master-Study.

5.2 Professional Status

6. ADDITIONAL INFORMATION

6.1 Additional Information

6.2 Further Information Sources

on the institution: www.fh-schmalkalden.de
on the programme: www.e-technik.fh-schmalkalden.de
also see 8.8

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Bachelor of Science	30.01.2015
Degree Transcript	30.01.2015

Certification Date: 04 February 2015

R. Grünler

Professor Dr. Reinhard Grünler

Head of the Examination Board



8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education that awarded it.

INFORMATION ON THE GERMAN HIGHER EDUCATION SYSTEM

1 Types of Institutions and Institutional Status

Higher education (HE) studies in Germany are offered at three types of Higher Education Institutions (HEI).²

- *Universitäten* (Universities) including various specialized institutions, offer the whole range of academic disciplines. In the German tradition, universities focus in particular on basic research so that advanced stages of study have mainly theoretical orientation and research-oriented components.

- *Fachhochschulen* (Universities of Applied Sciences) concentrate their study programmes in engineering and other technical disciplines, business-related studies, social work, and design areas. The common mission of applied research and development implies a distinct application-oriented focus and professional character of studies, which include integrated and supervised work assignments in industry, enterprises or other relevant institutions.

- *Kunst- und Musikhochschulen* (Universities of Art/Music) offer studies for artistic careers in fine arts, performing arts and music; in such fields as directing, production, writing in theatre, film, and other media; and in a variety of design areas, architecture, media and communication.

Higher Education Institutions are either state or state-recognized institutions. In their operations, including the organization of studies and the designation and award of degrees, they are both subject to higher education legislation.

8.2 Types of Programmes and Degrees Awarded

Studies in all three types of institutions have traditionally been offered in integrated "long" (one-tier) programmes leading to *Diplom*- or *Magister Artium* degrees or completed by a *Staatsprüfung* (State Examination).

Within the framework of the Bologna-Process one-tier study programmes are successively being replaced by a two-tier study system. Since 1998, a scheme of first- and second-level degree programmes (Bachelor and Master) was introduced to be offered parallel to or instead of integrated "long" programmes. These programmes are designed to provide enlarged variety and flexibility to students in planning and pursuing educational objectives, they also enhance international compatibility of studies.

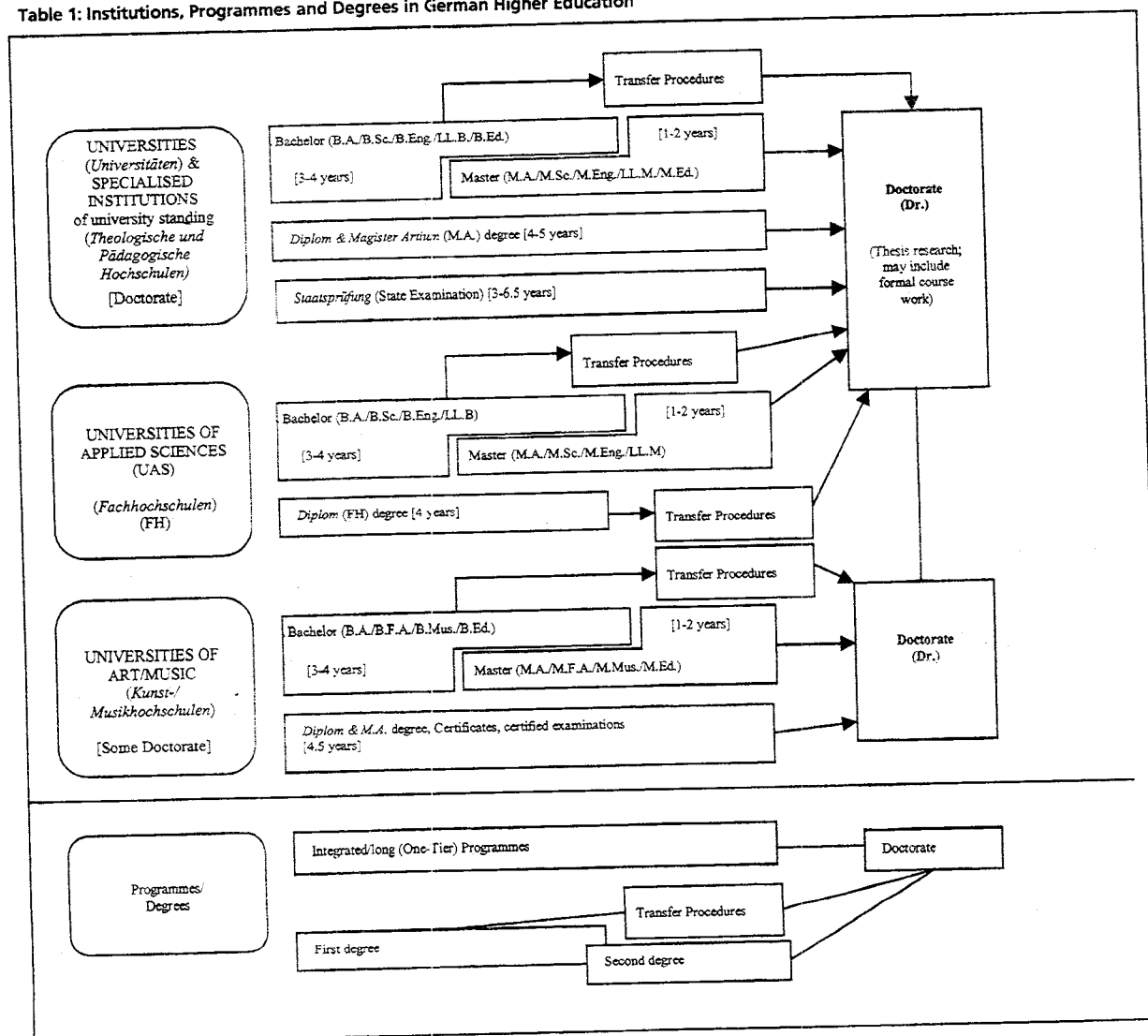
The German Qualification Framework for Higher Education Degrees³ describes the degrees of the German Higher Education System. It contains the classification of the qualification levels as well as the resulting qualifications and competencies of the graduates.

For details cf. Sec. 8.4.1, 8.4.2, and 8.4.3 respectively. Table 1 provides a synoptic summary.

8.3 Approval/Accreditation of Programmes and Degrees

To ensure quality and comparability of qualifications, the organization of studies and general degree requirements have to conform to principles and regulations established by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany (KMK).⁴ In 1999, a system of accreditation for programmes of study has become operational under the control of an Accreditation Council at national level. All new programmes have to be accredited under this scheme; after a successful accreditation they receive the quality-label of the Accreditation Council.⁵

Table 1: Institutions, Programmes and Degrees in German Higher Education



Organization and Structure of Studies

The following programmes apply to all three types of institutions. Bachelor's and Master's study courses may be studied consecutively, at various higher education institutions, at different types of higher education institutions and with phases of professional work between the first and the second qualification. The organization of the study programmes makes use of modular components and of the European Credit Transfer and Accumulation System (ECTS) with 30 credits corresponding to one semester.

8.4.1 Bachelor

Bachelor degree study programmes lay the academic foundations, provide methodological skills and lead to qualifications related to the professional field. The Bachelor degree is awarded after 3 to 4 years. The Bachelor degree programme includes a thesis requirement. Study courses leading to the Bachelor degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.⁶ First degree programmes (Bachelor) lead to Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.), Bachelor of Laws (LL.B.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.Mus.) or Bachelor of Education (B.Ed.).

8.4.2 Master

Master is the second degree after another 1 to 2 years. Master study programmes must be differentiated by the profile types "more practice-oriented" and "more research-oriented". Higher Education Institutions define the profile of each Master study programme. The Master degree study programme includes a thesis requirement. Study programmes leading to the Master degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.⁷ Second degree programmes (Master) lead to Master of Arts (M.A.), Master of Science (M.Sc.), Master of Engineering (M.Eng.), Master of Laws (LL.M.), Master of Fine Arts (M.F.A.), Master of Music (M.Mus.) or Master of Education (M.Ed.). Master study programmes, which are designed for continuing education or which do not build on the preceding Bachelor study programmes in terms of their content, may carry other designations (e.g. MBA).

8.4.3 Integrated "Long" Programmes (One-Tier): Diplom degrees, Magister Artium, Staatsprüfung

An integrated study programme is either mono-disciplinary (*Diplom* degrees, most programmes completed by a *Staatsprüfung*) or comprises a combination of either two major or one major and two minor fields (*Magister Artium*). The first stage (1.5 to 2 years) focuses on broad orientations and foundations of the field(s) of study. An intermediate examination (*Diplom-Vorprüfung* for *Diplom* degrees; *Zwischenprüfung* or credit requirements for the *Magister Artium*) is prerequisite to enter the second stage of advanced studies and specializations. Degree requirements include submission of a thesis (up to 6 months duration) and comprehensive final written and oral examinations. Similar regulations apply to studies leading to a *Staatsprüfung*. The level of qualification is equivalent to the Master level.

- Integrated studies at *Universitäten* (U) last 4 to 5 years (*Diplom* degree, *Magister Artium*) or 3 to 6.5 years (*Staatsprüfung*). The *Diplom* degree is awarded in engineering disciplines, the natural sciences as well as economics and business. In the humanities, the corresponding degree is usually the *Magister Artium* (M.A.). In the social sciences, the practice varies as a matter of institutional traditions. Studies preparing for the legal, medical, pharmaceutical and teaching professions are completed by a *Staatsprüfung*.

The three qualifications (*Diplom*, *Magister Artium* and *Staatsprüfung*) are academically equivalent. They qualify to apply for admission to doctoral studies. Further prerequisites for admission may be defined by the Higher Education Institution, cf. Sec. 8.5.

- Integrated studies at *Fachhochschulen* (FH) Universities of Applied Sciences (UAS) last 4 years and lead to a *Diplom* (FH) degree. While the FH/UAS are non-doctorate granting institutions, qualified graduates may apply for admission to doctoral studies at doctorate-granting institutions, cf. Sec. 8.5.

- Studies at *Kunst- und Musikhochschulen* (Universities of Art/Music etc.) are more diverse in their organization, depending on the field and individual objectives. In addition to *Diplom/Magister* degrees, the integrated study programme awards include Certificates and certified examinations for specialized areas and professional purposes.

8.5 Doctorate

Universities as well as specialized institutions of university standing and some Universities of Art/Music are doctorate-granting institutions. Formal prerequisite for admission to doctoral work is a qualified Master (UAS and U), a *Magister* degree, a *Diplom*, a *Staatsprüfung*, or a foreign equivalent. Particularly qualified holders of a Bachelor or a *Diplom* (FH) degree may also be admitted to doctoral studies without acquisition of a further degree by means of a procedure to determine their aptitude. The universities respectively the doctorate-granting institutions regulate entry to a doctorate as well as the structure of the aptitude. Admission further requires the acceptance of the Dissertation research project by a professor as a supervisor.

8.6 Grading Scheme

The grading scheme in Germany usually comprises five levels (with numerical equivalents; intermediate grades may be given): "*Sehr Gut*" (1) = Very Good; "*Gut*" (2) = Good; "*Befriedigend*" (3) = Satisfactory; "*Ausreichend*" (4) = Sufficient; "*Nicht ausreichend*" (5) = Non-Sufficient/Fail. The minimum passing grade is "*Ausreichend*" (4). Verbal designations of grades may vary in some cases and for doctoral degrees. In addition institutions may already use the ECTS grading scheme, which operates with the levels A (best 10 %), B (next 25 %), C (next 30 %), D (next 25 %), and E (next 10 %).

8.7 Access to Higher Education

The General Higher Education Entrance Qualification (*Allgemeine Hochschulreife, Abitur*) after 12 to 13 years of schooling allows for admission to all higher educational studies. Specialized variants (*Fachgebundene Hochschulreife*) allow for admission to particular disciplines. Access to *Fachhochschulen* (UAS) is also possible with a *Fachhochschulreife*, which can usually be acquired after 12 years of schooling. Admission to Universities of Art/Music may be based on other or require additional evidence demonstrating individual aptitude. Higher Education Institutions may in certain cases apply additional admission procedures.

8.8 National Sources of Information

- Kultusministerkonferenz (KMK) [Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany]; Lennéstrasse 6, D-53113 Bonn; Fax: +49(0)228/501-229; Phone: +49(0)228/501-0
- Central Office for Foreign Education (ZaB) as German NARIC; www.kmk.org; E-Mail: zab@kmk.org
- "Documentation and Educational Information Service" as German EURYDICE-Unit, providing the national dossier on the education system (www.kmk.org/doku/bildungswesen.htm); E-Mail: eurydice@kmk.org
- Hochschulrektorenkonferenz (HRK) [German Rectors' Conference]; Ahrstrasse 39, D-53175 Bonn; Fax: +49(0)228/887-110; Phone: +49(0)228/887-0; www.hrk.de; E-Mail: post@hrk.de
- "Higher Education Compass" of the German Rectors' Conference features comprehensive information on institutions, programmes of study, etc. (www.higher-education-compass.de)

The information covers only aspects directly relevant to purposes of the Diploma Supplement. All information as of 1 December 2008.

² *Berufsakademien* are not considered as Higher Education Institutions; they only exist in some of the *Länder*. They offer educational programmes in close cooperation with private companies. Students receive a formal degree and carry out an apprenticeship at the company. Some *Berufsakademien* offer Bachelor courses which are recognized as an academic degree if they are accredited by a German accreditation agency.

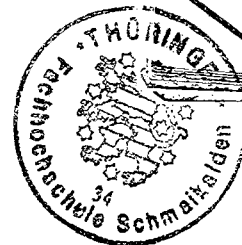
³ German Qualification Framework for Higher Education Degrees (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 21.04.2005).

⁴ Common structural guidelines of the *Länder* as set out in Article 9 Clause 2 of the Framework Act for Higher Education (HRG) for the accreditation of Bachelor's and Master's study courses (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 10.10.2003, as amended on 18.9.2008).

⁵ "Law establishing a Foundation 'Foundation for the Accreditation of Study Programmes in Germany'", entered into force as from 26.2.2005, GV. NRW. 2005, nr. 5, p. 45 in connection with the Declaration of the *Länder* to the Foundation "Foundation: Foundation for the Accreditation of Study Programmes in Germany" (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 16.12.2004).

⁶ See note No. 5.

⁷ See note No. 5.



Die Echtheit der vorstehenden / umstehenden Unterschrift

der/des Sachbearbeiter Herr Becher
(Funktion/Name)

bei der Fachhochschule Schmalkalden
(Behörde)

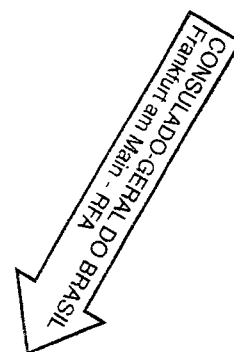
und die Echtheit des beigedruckten Dienstsiegels/-stempels
werden hiermit bestätigt.

Zugleich wird bescheinigt, dass die/der Vorgenannte zur
Verrichtung der Amtshandlung befugt ist / war.




Thüringer Landesverwaltungsamt
Weimerplatz 4 99423 Weimar
Postfach 2249 99403 Weimar

Weimar, 10.02.2015 i.A. [Signature]
(Unterschrift)




- H. Buhlmann -

BRA



Pagou R\$ 5,00 - Ouro
€ 5,00 - TEC 410.2

BRA



663063MJ

Consulado-Geral do Brasil em Frankfurt
Solicitação nº 410.2.15/219-000010

Reconheço verdadeira, por semelhança, a assinatura neste documento de Sr. Buhlmann - funcionário da(a) Secretaria de Administração do Estado da Turíngia, em nota(n) Weimar Alemanha. E, para constar onde convier, mando passar o presente, que assinei e fiz selar com o selo deste(a) Consulado-Geral.

Frankfurt, vinte e três de fevereiro de dois mil e quinze
(23/02/2015)

Candice Dutra Lima
Candice Dutra da Costa Lima
Vice-Consul

663063MJ ATENÇÃO
Se o número no código de barras for diferente, esta etiqueta É FALSA.

- Dispensada a legalização da assinatura consular de acordo com o art. 2º, do Dec. 84.451/80.
- A presente legalização não implica aceitação do teor do documento.