



Industry - Academia Collaboration Chihuahua City

December 2019

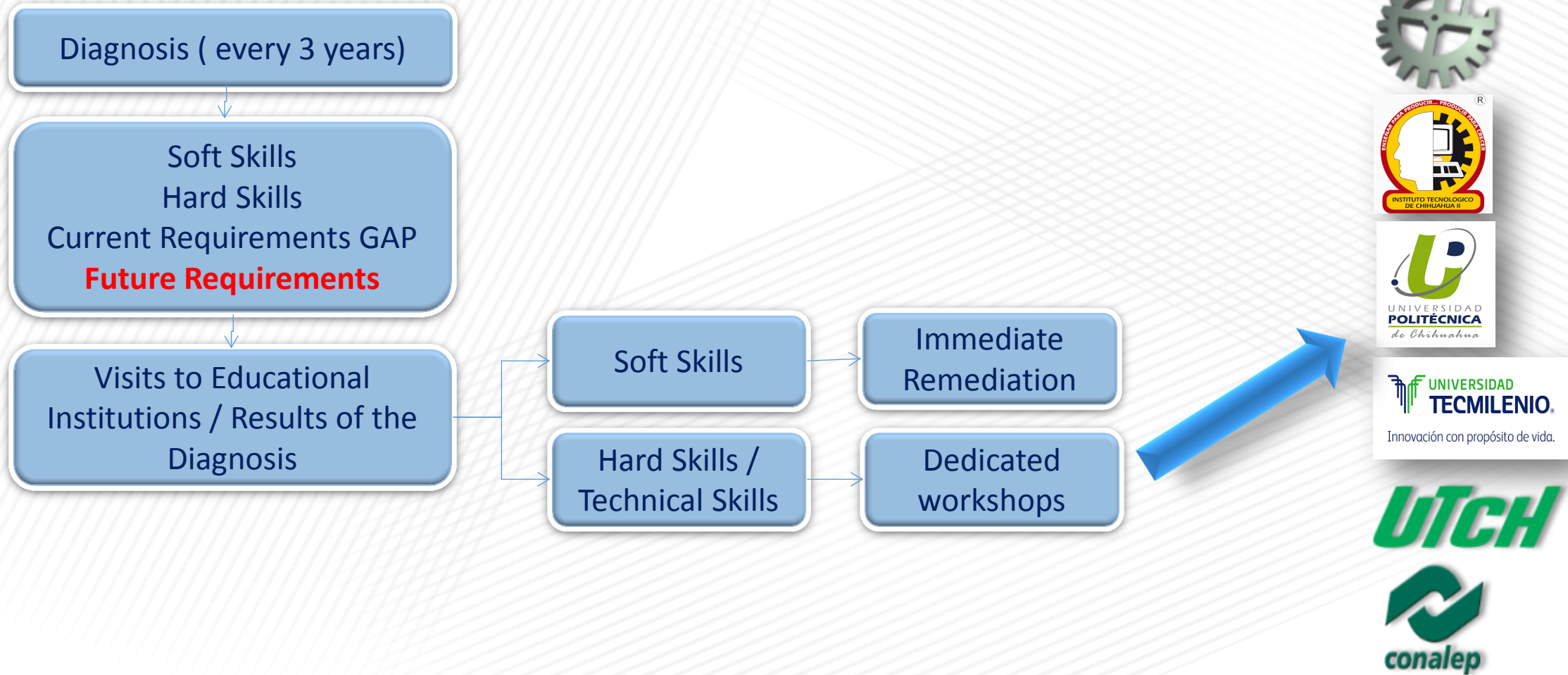
Objectives:

- Ensure proper correlation between academic programs and industry required skills
- Promote continuous interaction between schools and companies
- Anticipate future skills at all levels of manufacturing labor environment.
- Manage talent incubation projects for younger students

Chihuahua highlights:

- + 98% of region industry engineers and technicians are local
- International agreements in place with Universities for student mobility
- New programs design periods usually takes from 6 to 12 months
- Specialized training options are available for all organizational levels

Index /Cluster entailment strategy:



Programs reviewed 2015-2018

Participants



TEXTRON AVIATION



INDUSTRIAL ENGINEERING (INDUSTRIAL DESIGN)

AERONAUTIC ENGINEERING



SPECIAL CERTIFICATE FOR MECHATRONIC ENGINEERS
AEROSPACE CERTIFICATIONS



MANUFACTURING PROCESS ENGINEERING



Programs to be reviewed 2019-2020



MECHATRONIC ENGINEERING

.....



LOGISTICS AND SUPPLY CHAIN

.....



MECHATRONIC
ENGINEERING

.....



FINANCE AND PUBLIC
ACCOUNTANT CAREERS



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Chihuahua



Industry requirements short term for the academia

- Sensor Technologies
- Model Simulation
- Embedded Software
- MEMS
- Robots Programming
- Nanostructured Materials
- VR , AR Technology
- 3D printing

Special project 2019



COLEGIO DE BACHILLERES
DEL ESTADO DE CHIHUAHUA



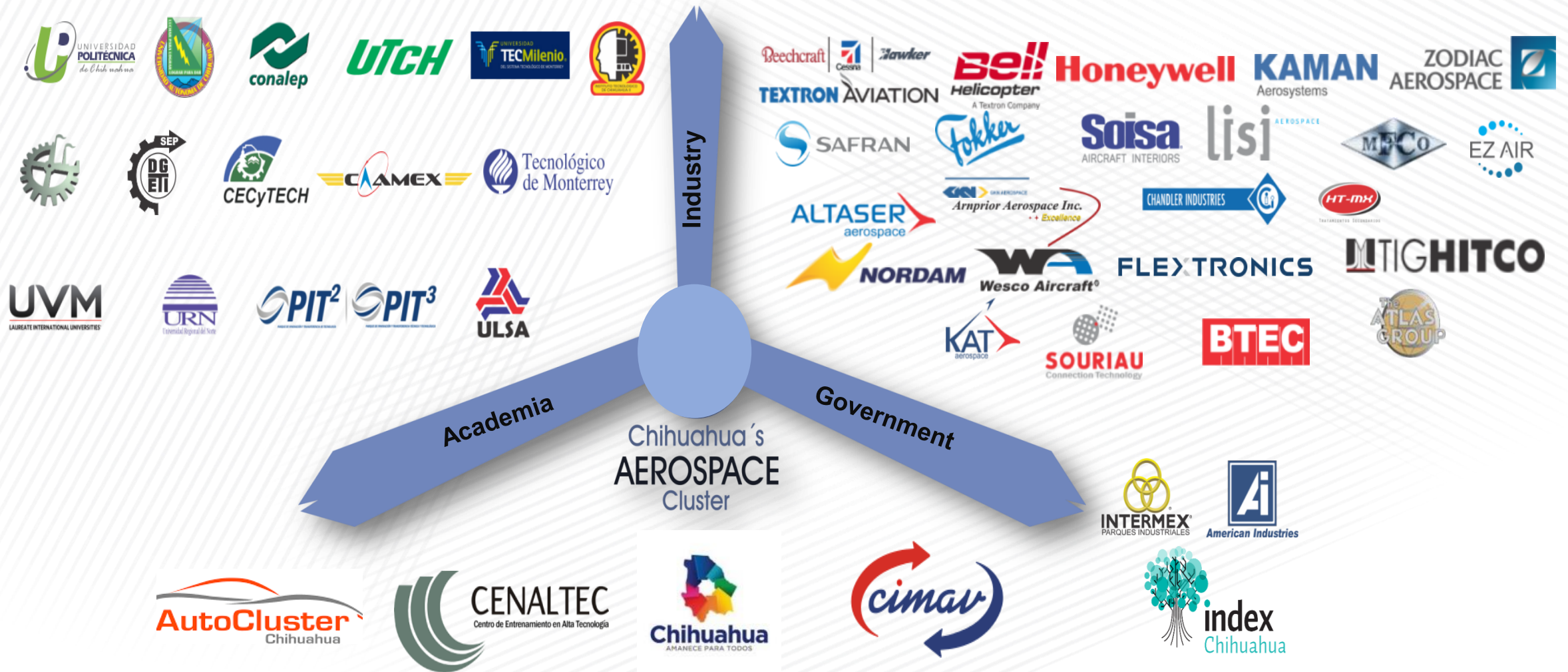
**BILINGUAL SKILLS
ENGINEERING
FINANCE AND MARKETING**



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Chihuahua



Triple Helix Model



Chihuahua Educational Capabilities in a Nutshell

Trained employees 2007 - 2019: 35,538

Programs:

- Electrical Wiring
- PLC Logics 5000
- Sheet metal assemblies
- NDT testing of aircraft assemblies
- Aerospace metals and alloys
- AS9100
- AutoCAD, CATIA V5, Mastercam , NX, Solid works
- Design
- CNC machining and turning (3,4 and 5 axis)
- Welding
- Plastic Injection
- Composites

Collaboration Agreements:



FROM 2007 TO 2019 AEROSPACE	
COMPANIES	GRADUATES
HONEYWELL	1211
HAWKER BEECHCRAFT	771
CESSNA	605
BELL HELICOPTER	522
ZODIAC AEROSPACE	351
ARNPRIOR AEROSPACE	196
FOKKER	163
CAV AEROSPACE	94
TIGHITCO	104
NORDAM	42
KAMAN	24
MANOIR	21
LABINAL	20
L3	13
<u>TOTAL</u>	<u>4137</u>





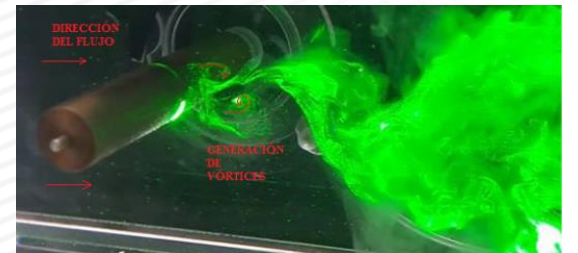
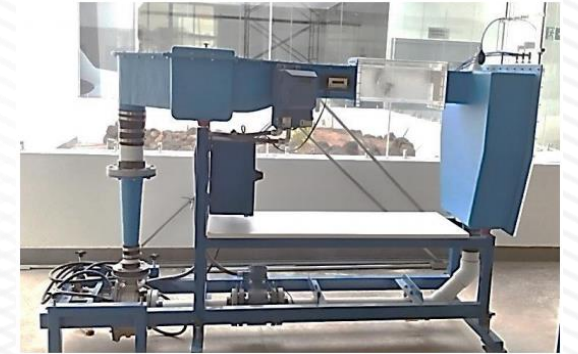
Chihuahua State University Engineering School

Aerospace Engineering Program
Mining Engineering
Software Engineering
IT Process Engineering
Mathematics Engineering
MD Sciences, IT, Engineering , Structures,
MD Software
PHD Engineering:

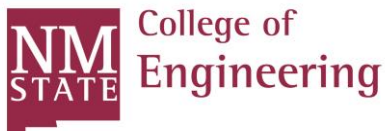
Current students: 2870

Laboratory:

- Water tunnel 6In
- Wind tunnel 12 In
- PIV La vision
- Prototypes 3D printer



Collaboration Agreements:



Chihuahua Polytechnic University

Aeronautic Engineering
Environmental Engineering
Automotive Engineering:

- Aerospace regulations
- Aerodynamics, Thermodynamics
- Navigation Systems
- Flight mechanics
- Materials Resistance
- Structural design
- Design
- French language program
- MD Engineering Industrial Processes



Collaboration Agreements:



Current students: 922

Laboratory:


- Hangar
 - Flight simulator
 - Aircraft (King Air 200)
 - Wind Tunnel (1 x 1.5 mts , 60Hz turbine)
- CAD,CAM
- 3D Printing
- CNC
- Pneumatics
- Hydraulics
- Design PC stations
- PLC's





Chihuahua Technologic Universities

Mechatronics
Industrial Process
Renewable Energy
Supply Chain and Logistics
Nanotechnology

French language program 
English language program

Collaboration Agreements:

Current students: 6088
Laboratory:

- Plastic injection
- CAD,CAM
- 3D Printing
- CNC
- Pneumatics
- Hydraulics
- Design PC stations
- PLC's





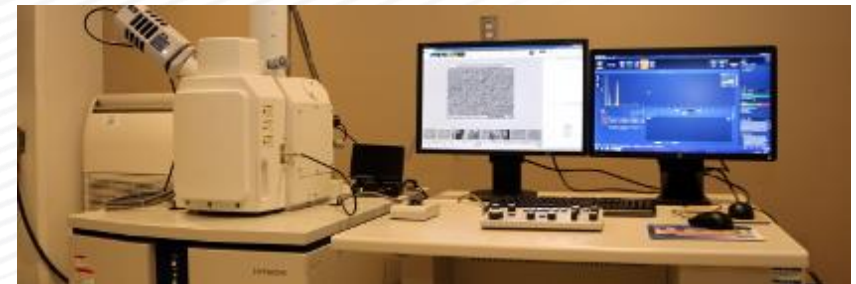
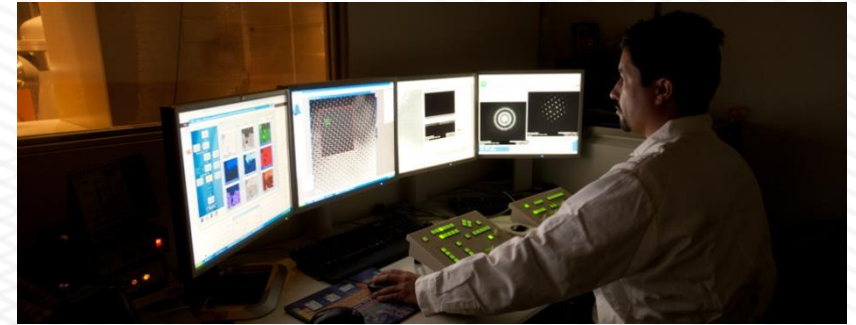
Advanced Materials Center (R&D)

Structural Integrity Program (MD & PhD):

- Fatigue Analysis
- Limit & Ultimate tensile strength
- Joint strength
- Patran Nastran
- DTA methodologies
- Material testing

Laboratory:

- Metal Atomization
- Nanotech
- Residual Stress
- NDT
- Thermal Analysis
- Metal Integrity



Collaboration Agreements:



Chihuahua Technological Institute

- Electric Engineering
- Electronic Engineering
- Electro mechanics Engineering
- Materials Engineering
- Industrial Engineering
- Mechanics engineering
- MD electronic sciences
- MD mechatronics
- MD manufacturing process

Current students: 4749

Laboratory:

- CNC
- 3D printer prototype
- Metrology
- Materials Analysis
- AutoCAD
- Solid works
- Embedded programming



• Collaboration agreements:



Honeywell

ZODIAC
AEROSPACE



Beechcraft
Textron AVIATION



American Industries

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AEROSPACE

BOMBARDIER

Chihuahua II Technological Institute

Industrial Design Engineering

IT Engineering

Industrial Engineering:

- Virtual modeling
- Material resistance
- CAD
- Innovation process
- Thermodynamics
- Design testing
- Eco-design

Collaboration Agreements:



Honeywell

ZODIAC
AEROSPACE



Beechcraft
Textron AVIATION



American Industries

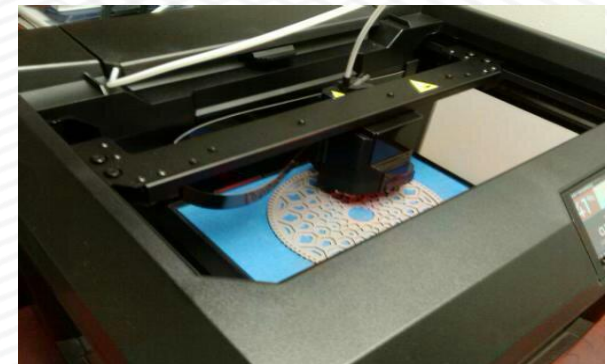
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AEROSPACE

BOMBARDIER

Current students: 3506

Laboratory:

- CNC
- 3D printer prototype
- Metrology
- Materials Analysis
- AutoCAD
- Solid works



National College for Technical Preparation

Aerospace Inspection Technicians:

- NADCAP
- AS9100
- Inspection process
- Aerospace process manufacturing
- Lean manufacturing

MRO Technicians:

- Aeronautics normativity
- Hydraulics
- Preventive and corrective maintenance
- Pneumatic
- Ventilation and pressurization systems

Current students : 3200

Laboratory:

- CNC
- Pneumatics
- Hydraulics
- Design PC stations
- Welding
- PLC's



Collaboration Agreements:



“Industry and education institution physical limits are not given by the fences and walls , both are part of the same system and must coexist within their spaces to add value to the community”

Juan Carlos Romero Hicks
Mexican Senator



José Nuñez Leos

Education Counselor

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